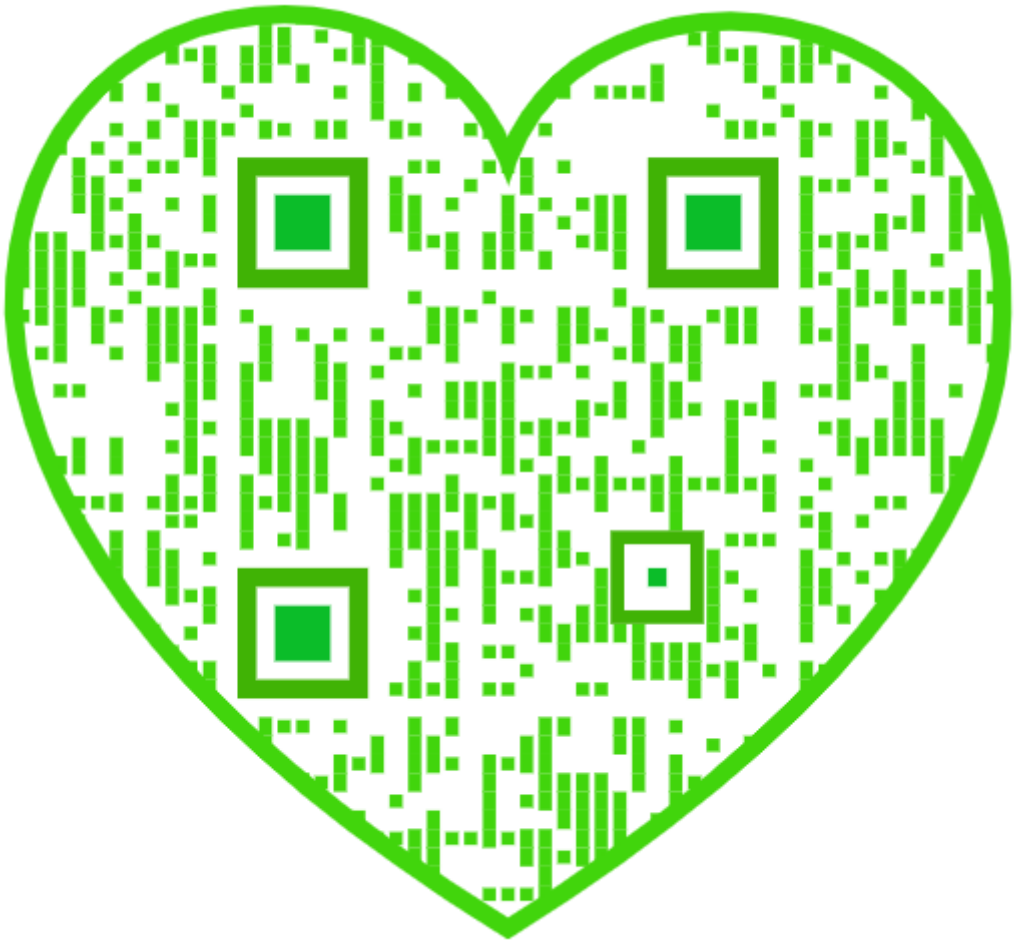

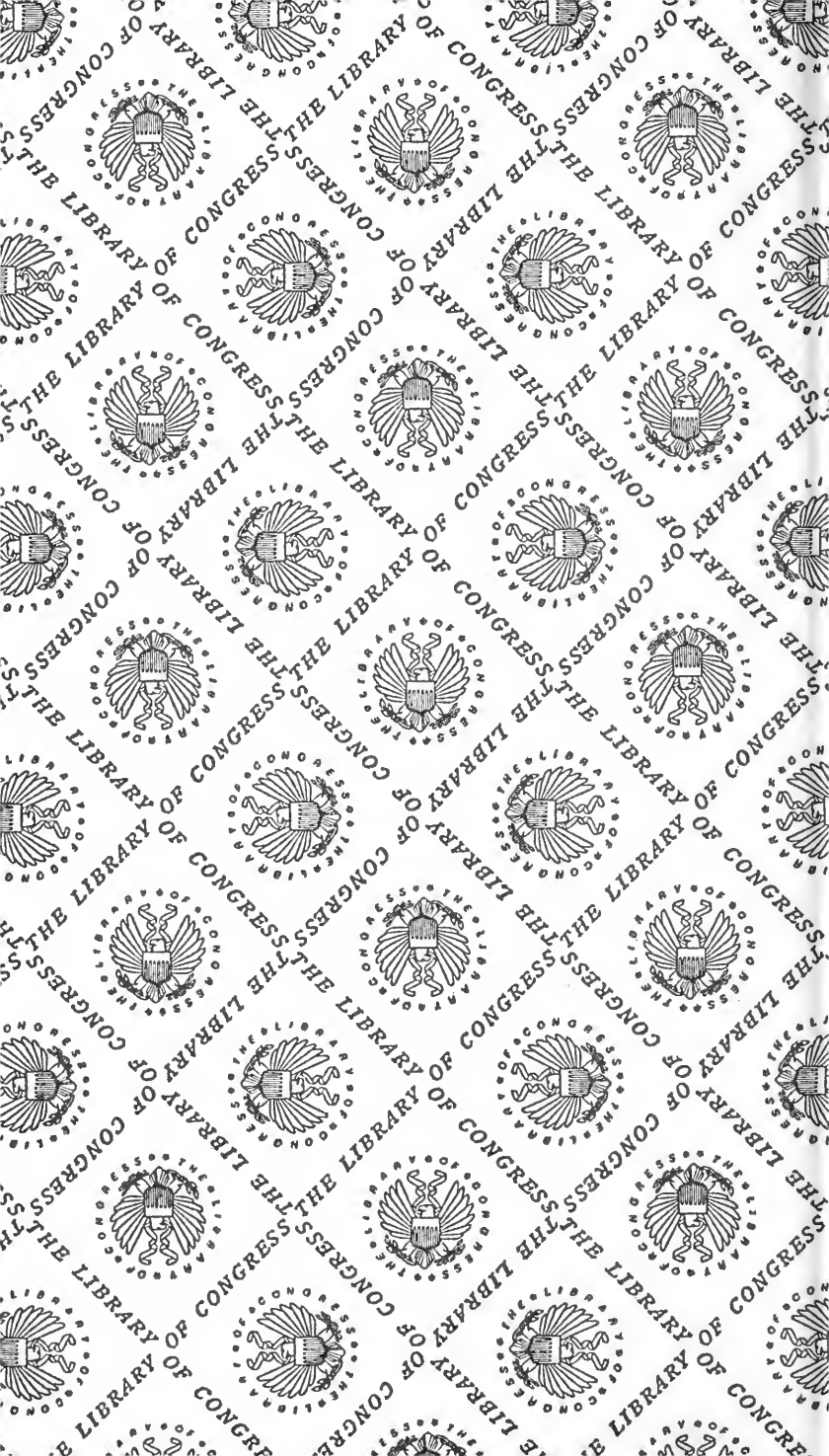
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Modern Business

A SERIES OF EIGHTEEN TEXTS, ESPECIALLY PREPARED FOR THE ALEXANDER HAMILTON INSTITUTE COURSE IN ACCOUNTS, FINANCE AND MANAGEMENT

EDITED BY

JOSEPH FRENCH JOHNSON

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ALEXANDER HAMILTON INSTITUTE
NEW YORK

Economics

A PRACTICAL EXPOSITION OF THE SCIENCE OF BUSINESS, WITH ILLUSTRATIONS FROM ACTUAL EXPERIENCE

BY

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EDITOR'S PREFACE

"Modern Business" is a pioneer work in its field. Its authors, who are university specialists, have aimed in these twelve volumes to apply scientific methods in the discussion of various phases of business and at the same time to be so practical and clear, and so copious with illustrations, that their ideas shall be readily understood by every man of ordinary intelligence. They should appeal to the mature man already engaged in business, for they cover many subjects with which he cannot be at first hand familiar; and to the young man looking forward to a business career, for they will give him a helpful grasp of underlying principles and a most useful knowledge of modern practice.

The volumes of "Modern Business," it should be clearly understood, are not designed to cover thoroughly and in detail every point that ought to be included in a study of present-day business; they constitute but one feature of the comprehensive course of reading in business as a part of which these volumes are here presented. The function of the text-books in this course is to present clearly the basic principles of each subject discussed. Applications of problems, concrete questions, technical details, are largely left to be treated in other features of the course. We may say, however, that the books alone contain—for the man who studies them properly—the fundamentals of a university education in the science and art of business. In this brief introduction I cannot give space to a full treatment of all

the features of the complete course, and I shall therefore confine myself to a brief review of the characteristics and purposes of the "Modern Business" series.

It is only during the last few decades that business has been recognized as a science worthy the attention of specialists. Many doctrinaire political economies have been written, but these in the main have sought to explain, not the actual phenomena of the business world, but the phenomena of an imaginary, hypothetical world in which all men were supposed to be actuated solely by economic or material considerations. Such classic writers as Adam Smith, David Ricardo, and John Stuart Mill performed a great service for humanity, for they called attention to certain truths which must always prevail so long as human nature is unchanged; but their service lies largely in the field of pure economics rather than that of applied or practical economics. Our great economists did not seek to explain the actual phenomena of every-day life. Their interests lay, not in the science of business, but in social or national economy. As a result their works, although possessing great scientific value, seem far removed from the affairs which interest the practical business man.

The volumes of "Modern Business," on the other hand, are directly concerned with the problems which the business man is called upon daily to solve. They treat specifically of the science and art of business. The problems involved in the more general science of so-called political or national economy they discuss only in so far as light is thus thrown upon actual transactions. These twelve volumes, from a scientific point of view, all belong in the same field, each discussing a separate set of business phenomena. Could their con-

tents be condensed into a single volume, it would be a complete syllabus or outline of the science of business in all its phases and practical applications. It must not be supposed, however, that the writers ignore the teachings of the older economists. On the contrary, those teachings, in so far as they are applicable to-day, are here given emphasis and fresh illustration.

While the twelve volumes may be regarded as a unit, nevertheless each volume is complete in itself and may be studied independently of the rest. The volume on "Economics," for example, is a general introduction to the course and touches upon almost all of the questions raised in the other volumes. The volumes on "Corporation Finance" and "Investment and Speculation" treat of kindred subjects, but from different points of view. The same may be said of the volumes on "Money and Banking" and "Banking Practice and Foreign Exchange." The two volumes on accounting could not be read to advantage by a man ignorant of the subject unless he began with Volume V, entitled "Accounting in Theory and Practice," in which the elements of the subject are first given. The volumes which treat of Salesmanship, Advertising, Insurance, Real Estate and Commercial Law can be understood by any reader without reference to other volumes.

In order that each volume might possess independent unity and be complete in itself, as the reader will discover, certain important topics are discussed in two or more volumes. For example, the modern methods of speculation in stocks are explained in "Corporation Finance" and again, but in greater detail, in "Investment and Speculation," and in the volume on "Economics" certain types of business organization are mentioned which the reader will find described more fully in Vol-

ume II. The editor permitted important subjects to be covered twice because he deemed it important that each book should be complete in itself, and desirable that the reader should approach certain questions from two different viewpoints.

Within the last few years many of the leading universities of the United States, including Harvard, New York University, University of Wisconsin, University of Michigan, University of Illinois and the University of Pennsylvania, have established schools of commerce in which they aim to give young men a thorough training in the principles of business. Their work is based on the belief that through a study of commercial methods and economic forces a young man may get valuable mental discipline and at the same time acquire the technical knowledge and the habits that make for efficiency and success in business. These schools of commerce have been the outgrowth of a popular demand for instruction of the sort they give, and the large number of students they have enrolled is evidence that the people of the United States realize the importance of intellectual training as a preparation for business careers. It has long been acknowledged that a man who chooses the career of a physician, of a civil or mechanical engineer, of an architect, or of a dentist, must prepare himself for his work by devoting several years to study in the schools and universities. Now it is known that the young man who chooses a career as a banker, or certified public accountant, or stock-broker, or bond-dealer, or fire or life insurance agent, or journalist, or real estate dealer, or manufacturer, ought in the beginning to learn by study all that is possible from the experience of others. In other words, many of our business careers have become professional in their character, requiring

a training of the intellect quite as much as the older professions. It is for this purpose that our schools of commerce have been established and are now enrolling large numbers of students.

But not all men can attend these schools of commerce. Many a young man is earning a living in his native town at a distance from a university and without the means to go to it. Furthermore, there are thousands of older men—including many of high ability—in the United States who realize the deficiencies of their early training and regret that they have no opportunity to get the education which they could not or did not get in their youth. Most ambitious men of this kind have families to support and are tied down to a particular location. It is for men of this sort that are distant from universities, or whose daily employment prevents their attendance upon university schools, that these volumes have been prepared. The authors, all of them experienced university teachers, have aimed, above all things, at comprehensiveness and clearness, in order that no reader of intelligence might be puzzled. They have aimed also to develop each subject in such logical fashion and to illustrate all points so clearly that every reader who conscientiously follows directions and does the work outlined for him shall not fail to arrive at an intelligent understanding of each of the subjects.

The volume on "Economics" the reader will find is the keystone of the business arch. A man who does not understand the science of business can never have a thorough and comprehensive grasp of any single business. This subject underlies all business just as mathematics underlies all engineering vocations. It is the foundation subject and should first of all be studied. Its pur-

pose is to bring before the reader a clear idea of the business problems which economists have sought to solve and to make him able to read the scientific literature of the subject intelligently. It explains the laws governing the price of goods, the wages and salaries of employés, the profits or net earnings of employers, including both individuals and corporations, the rate of interest, and the rent of buildings and land. It discusses in comprehensive style the perplexing problems raised by trade unions, by the capitalistic combinations called trusts, by natural monopolies, by the tariff, and by the state regulation of railways. In fact, in this first volume the student will find that light is thrown upon most of the questions raised in the succeeding volumes.

Two volumes are devoted to accounting. Volume V on "Accounting in Theory and Practice" elucidates the principles of the subject and gives to the reader the guidance he needs in training himself for the solution of difficult practical problems. Of particular interest is the discussion of bookkeeping principles, of partnership and corporation forms and accounts, and of accounting for intangible expenditures and assets.

Volume XI is in part devoted to the important work of the auditor, stating the principles which determine the correctness and completeness of an audit and giving concrete illustrations of the proper method to pursue in the audit of different businesses. The important subject of costs, which is treated in the other half of the volume, cannot be studied too carefully by anyone who is even remotely interested in manufacturing—and this includes bankers, wholesalers, accountants, and many others.

While these two volumes on accounting contain much more information about accounts than is possessed by the average business man in the United States,

nevertheless every business man who is trying to increase his efficiency and earning power ought to improve every opportunity of getting a grasp of the whole subject. If he engages in the manufacturing business, his knowledge of cost accounts will be a telling advantage. If he is a banker, his understanding of the principles and proper methods of auditing and of accounts in general will promote his interests. In fact, in every field of business the man who understands the science of accounts and can solve its most difficult problems, has a great advantage over one who has merely a knowledge of routine bookkeeping.

The four volumes which treat of finance cover both the theoretical and the practical phases of the subject. The volume on "Corporation Finance" describes the sources from which corporations obtain their funds and the methods which they employ. This volume is practical and descriptive and can be understood by a reader who has had no previous training in finance.

The volume on "Money and Banking" expounds the fundamental principles underlying all financial operations. "Banking Practice and Foreign Exchange" is especially intended for bankers. The volume on "Investment and Speculation" is designed for the especial benefit of men employed in stock and bond houses. It describes the methods of the stock exchange and explains the transactions and processes of that great financial market known as Wall Street. A student who faithfully masters the contents of these four volumes on finance, even though he were born and bred in the country, would enter Wall Street with a much clearer idea of its possibilities and its dangers than is possessed by many a man who has been employed for years in that great market.

The volumes treating of "Organization and Management," "Salesmanship," "Advertising," "Selling, Credits and Traffic," should prove of great practical help both to executives who are hourly handling problems in these fields and for young men who are trying to get a clear understanding of the basic business processes. The volume on "Organization and Management" lays down the fundamental principles underlying the work of the so-called efficiency engineer, and describes methods which have proved most successful in the conduct of modern business. In the fields of selling, advertising and credits new business professions are rapidly being developed, and the effort has been made in these volumes to give the reader scientific and helpful guidance. No reader should neglect the chapters on "Business Correspondence."

The volume on "Commercial Law," primarily designed to keep business men from making unnecessary blunders, should prove especially useful to employés of banking, trust, surety and insurance companies, and to men preparing for the accounting profession.

The editor in conclusion desires to say that he has left the authors complete liberty in the expression of opinions and conclusions. Each author is alone responsible for the views he expresses. In matters of opinion or of choice between opposing theories these volumes are not in complete harmony, and no volumes of the sort could be unless they were the product of a single pen.

In order that the reader may become familiar with other views, especially those of the Classical School, the editor has inserted in this volume citations from the works of other economists.

JOSEPH FRENCH JOHNSON.

New York University.

AUTHOR'S PREFACE

In a Democracy a knowledge of economics should be for the many, not the few. The wealth and prosperity of the nation are prerequisite to the wealth and happiness of the people. A high civilization is possible only with an intelligent development of a nation's resources, and a general diffusion of the resulting wealth. Any endeavor, therefore, to put into practical and popular form a knowledge of the production and distribution of wealth is a move in this direction.

The book presupposes no previous knowledge of economics other than that possessed by any intelligent person who reads the daily newspapers and keeps his eyes open. A formal arrangement of the volume into divisions and subdivisions, as well as discussions of economic theory, are conspicuous by their absence. The attempt has rather been to give a description of the business world to-day couched in as few technical terms as possible. The terms "rent" and "interest," for example, are used as they are in the average business man's vocabulary, and not in the more theoretic sense used by many economic writers. The illustrations are taken from conditions found in the everyday business world. Thus, for example, the discussion of an apprentice system centers in a description of the system now in operation in the Baldwin Locomotive Works. Pursuant to this same aim, the author has gone rather extensively into the important fields of Money and Credit and Corporate Organization.

The concluding chapters of the book deal with problems of to-day. As great as our past development has been and as wonderful as present prosperity is, few thinking men will contend that our civilization is as far advanced as we have a right to demand. Wealth and prosperity are realities, but so also are child labor, unemployment and congestion. These are maladjustments which an intelligent application of social and economic principles can remedy. Then, again, as conditions change and as our industrial institutions grow, new problems must of necessity arise. This is true of all dynamic nations and is the price of progress. If they are to be solved aright, the people must have a true knowledge of their nature. A discussion of these problems in a volume of this kind is not indicative of pessimism, but merely of an optimism which is not afraid to look the facts in the face.

Edward Sherwood Meade.

University of Pennsylvania.

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PART I: PRODUCTION

CHAPTER I

PROPERTY

1. *Economics defined.*—Economics, the science of business, treats of man's activity in the acquisition of wealth. This science explains how wealth is created and made available for the satisfaction of human wants, and how the ownership of wealth produced is apportioned among the various agents who have contributed to its production.

Wealth may be defined as consisting of everything which serves any human purpose and which nature does not supply gratuitously to man. Everything is, therefore, included in the definition of wealth, to obtain which something will be given in exchange. This definition of wealth excludes some of the most desirable and necessary goods. Air and sunshine are indispensable to human existence. If they could not be obtained free, large sums would be given to obtain them. Since these goods are, however, commonly to be produced in unlimited quantities, as free gifts of nature, they are not counted as elements of wealth. They are known as free goods.

In contrast with free goods are economic goods, which are those goods which have a value because their supply is limited. Wealth is the sum total of all economic goods. This division of all goods into two classes does not imply a hard and fast distinction be-

tween them. Free goods pass into the class of economic goods the moment the demand for them exceeds the supply. Thus we consider water as a free good, but in our large cities a rental must be paid to obtain it, and there is also a large trade in spring and distilled water, which is bottled and sold at a high price. In the same way air and sunshine may become economic goods. The climate of the Jersey coast, for example, has a distinct economic value, and because of this climate enormous prices are paid for land contiguous to the shore.

We may also distinguish between individual wealth consisting of goods exclusively possessed by individuals, and national wealth, which is the common property of the entire nation and cannot be appropriated by individuals. The surface of Manhattan Island is worth several billion dollars to those who own it. The wealth of the United States, however, is not increased because of this fact. On the other hand, in our great systems of rivers the United States has a resource of incalculable value, no part of which, for the future at least, is likely to be appropriated by individuals. The subject matter of economics, therefore, to summarize our definition, consists of all those useful and desirable things which are so limited in quantity that they can be appropriated by individuals, or, another statement of the same thought, wealth consists of all useful and agreeable things except those which are freely supplied by nature.

2. *Private property.*—Our next question concerns the institution of private property. The right of property is defined by Blackstone as "that sole and despotic dominion which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe." [1] The

[1] Cooley's Blackstone, 3d Ed., Vol. I, Book II, p. 1.

origin of private property is explained by the same writer as arising out of the necessities of the various situations in which man found himself. Originally the right of possession continued only for the time during which the active possession lasted. The ground, for example, was originally everywhere held in common, no part of it being the property of any one in particular, "yet whoever was in the occupation of any determined spot of it, for rest, for shade, or the like, acquired for the time a sort of ownership, from which it would have been unjust, and contrary to the law of nature, to have driven him by force; but the instant that he quitted the use or occupation of it, another might seize it, without injustice." [1]

This community of ownership, however, was only transitory. To continue Blackstone's explanation:

> But when mankind increased in number, craft, and ambition, it became necessary to entertain conceptions of more permanent dominion; and to appropriate to individuals not the immediate use only, but the very substance of the thing to be used. Otherwise innumerable tumults must have arisen, and the good order of the world been continually broken and disturbed, while a variety of persons were striving who should get the first occupation of the same thing, or disputing which of them had actually gained it. As human life also grew more and more refined, abundance of conveniences were devised to render it more easy, commodious, and agreeable; as, habitations for shelter and safety, and raiment for warmth and decency. But no man would be at the trouble to provide either, so long as he had only a usufructuary property in them, which was to cease the instant that he quitted possession; if, as soon as he walked out of his tent, or pulled off his garment, the next stranger who came by would have a right to inhabit the one, and to wear the other. In the case of habi-

[1] Cooley's Blackstone, Vol. I, Book II, p. 2.

tations in particular, it was natural to observe, that even the brute creation, to whom everything else was in common, maintained a kind of permanent property in their dwellings, especially for the protection of their young; that the birds of the air had nests, and the beasts of the field had caverns, the invasion of which they esteemed a very flagrant injustice, and would sacrifice their lives to preserve them.[1]

According to Blackstone the idea of property in land, the exclusive dominion over the surface of the earth, was the last to be evolved.

As the world by degrees grew more populous, it daily became more difficult to find out new spots to inhabit, without encroaching upon former occupants; and by constantly occupying the same individual spot, the fruits of the earth were consumed, and its spontaneous produce destroyed, without any provision for a future supply of succession. It therefore became necessary to pursue some regular method of providing a constant subsistence; and this necessity produced, or at least promoted and encouraged, the art of agriculture. And the art of agriculture, by a regular connection and consequence, introduced and established the idea of a more permanent property in the soil than had hitherto been received and adopted. It was clear that the earth would not produce her fruits in sufficient quantities, without the assistance of tillage; but who would be at the pains of tilling it, if another might watch an opportunity to seize upon and enjoy the product of his industry, art and labor? Had not therefore a separate property in lands, as well as movables, been vested in some individuals, the world must have continued a forest, and men have been mere animals of prey; which, according to some philosophers, is the genuine state of nature.[2]

3. *The right of private property.*—The right of private property carries with it the following express provisions: First, the right to use; second, the right

1 Cooley's Blackstone, Vol. I, Book II, p. 2.
2 Cooley's Blackstone, Vol. I, Book II, p. 6.

to dispose of by gift or by sale; third, the right to devise or bequeath. The owner of a farm, for example, has the right, in which he is protected by the state, to sell it or to exchange it for something else, and finally, to hand down this possession to his heirs. He has, in a word, the "free use, enjoyment and disposal of all his acquisitions without any control or diminution save only by the laws of the land."

In every stage of society these rights have been subject to certain limitations and restrictions whose object and effect has been to render property more secure. These restrictions on the exclusive dominance over material things by individuals cannot exist except in cases of well-ordered society where established laws are enforced by organized government. From the institution of property maintained by organized society which we call the state, two conclusions follow: First, that no man should use his property in a way opposed to the good of the community in which he lives and which protects him in his possession of this property; and second, that the state should have the right to take from him such portion of his property as may be necessary to preserve its existence and to achieve its ends.

Custom and a sense of propriety demand of the individual that he subordinate the exercise of the rights of private property to social interests and social requirements. The owner of the property must, therefore, use it in such a way as not to injure or inconvenience his fellows. Thus he cannot keep a vicious dog unchained; he cannot, in a town, keep gasoline for sale or use without proper precautions against explosions. The proprietors of manufacturing plants, the fumes from which, are offensive, are frequently required, when they are located in a large city, to build chimneys to

an enormous height in order that the fumes may be dissipated before descending to the level of the ground, or in cases where the waste products of factories when discharged into the streams pollute the source of water supply, the owners of these plants may be forced to provide, often at great expense, for some other means of disposal.

4. *Limitation of the right of private property by taxation.*—The universal limitation of the right of private property is the right of taxation. Every property owner is required to contribute from his means to the support of the state, and the only limitation to the contribution which may be exacted from each, aside from the necessity of obtaining the consent of the majority and the business inexpediency of over-burdening incomes and industry, is found in the necessities of the state.

5. *Limitation of the right of private property by public improvement.*—No man can maintain his right to private property which is wanted for a work of public improvement. If a railroad is to be put through a man's farm, and he refuses to part with his property at a reasonable price, the railroad company may invoke the right of "eminent domain," and the courts, acting as the agents of the state, will place a fair value on the property which the railroad desires, and will compel the owner to accept this amount of money for his property. In many other ways the right of private property is limited by the necessities of social existence.

Since private property would be impossible, however, without the constraint and support of organized society which protects its possessors in their ownership, these limitations are not to be considered as impairing the right of private ownership. It is generally agreed that the institution of private property conduces more to the

general welfare of the community than any other which can be substituted for it.

6. *Effects of private property upon individuals.*— Men will not exert themselves to produce more wealth than is needed for their immediate subsistence unless they are to be secured in the enjoyment of what they produce. In countries such as Morocco or Turkey, where the right of property is disregarded by the government, and where accumulations of wealth are likely to be seized at any time by soldiers or officials, it is well known that only a small amount of wealth exists and that the people are miserably poor. In other countries, however, where property rights are secure, wealth is abundant and poverty is rare. Generally speaking, the prosperity of a people increases in proportion as individuals are secured in the possession and enjoyment of what they produce or acquire. It was said by an eighteenth century writer, "Give a man the secure possession of a barren rock and he will turn it into a garden."

This principle is well illustrated in a description of conditions of society in one of the remote valleys of the high Alps, written by Mr. H. D. Inglis many years ago:

> In the whole of the Engadine the land belongs to the peasantry, who, like the inhabitants of every other place where this state of things exist, vary greatly in the extent of their possessions. . . . Generally speaking, an Engadine peasant lives entirely upon the produce of his land, with the exception of the few articles of foreign growth required in his family, such as coffee, sugar and wine. Flax is grown, prepared, spun, and woven without ever leaving his house. He has also his own wool, which is converted into a blue coat without passing through the hands of either the dyer or the tailor. The country is incapable of greater cultivation than it has received. All has been done for it that industry and an extreme love of gain can de-

vise. There is not a foot of waste land in the Engadine. . . . Wherever grass will grow, there it is; wherever a rock will bear a blade, verdure is seen upon it; wherever an ear of rye will ripen, there it is to be found. Barley and oats also have their appropriate spots; and wherever it is appropriate to ripen a little patch of wheat, the cultivation of it is attempted. In no country in Europe will be found so few poor as in the Engadine. In the village of Suss, which contains about six hundred inhabitants, there is not a single individual who has not wherewithal to live comfortably, not a single individual who is indebted to others for one morsel that he eats.[1]

The same evidence is furnished by observers of the effect of immigration upon the thrift and acquisitiveness of the natives of Southern Italy. These southern Italians and Sicilians are at home miserably poor. The taxes on property are so high as to amount to practical confiscation. When working for others the farmer receives only twenty to thirty cents a day, and the cost of living per individual does not exceed five cents per day. These poverty-stricken people have come to America in great numbers and some of them have settled in the country, where their accumulations of property have been extraordinary. In the town of Hammonton, New Jersey, for example, there were 323 Italians in 1904, most of whom landed with practically no money only a few years before, who owned 4,846 acres assessed at $176,575 and worth double that amount. Of the 1,370 names on the tax register, 448, or one-third, were Italians, of whom but 96 paid only a poll tax. One Italian owned six houses and fourteen acres of land valued at $10,000; another had a farm and business with an estimated value of $15,000. The People's Bank of Ham-

1 "Switzerland, the South of France and the Pyrenees in 1830," H. D. Inglis, Vol. I, Chapters 8 and 10.

monton in September, 1890, had 450 deposit accounts on its books amounting to $87,080; only three of these accounts belonged to Italians and their aggregate amount was less than $500. In 1904, however, out of $260,779 on deposit, $56,614 or 21.7 per cent belonged to Italians. No better illustration of the stimulating effect of the exclusive use of the product of one's labor in stimulating industry and encouraging acquisition could be desired than the experience of these Sicilians whom General Francis A. Walker described as "beaten men from beaten races, the worst failures in the struggle for existence."

We may conclude, therefore, that the right of property is justified by its results in the prosperity of the individual and the state. The burden of proof rests upon those who would substitute for private property some system of common ownership, such as Communism or Socialism, to show that these revivals of institutions which preceded private property would conduce more to the general welfare than the system which now prevails, and which has in its favor the accumulated experience of every civilized nation.

Private property, as an institution, did not owe its origin to any of those considerations of utility which plead for the maintenance of it when established. Enough is known of rude ages, both from history and from analogous states of society in our own time, to show that tribunals (which always precede laws) were originally established, not to determine rights, but to repress violence and terminate quarrels. With this object chiefly in view, they naturally enough gave legal effect to first occupancy, by treating as the aggressor the person who first commenced violence, by turning, or attempting to turn, another out of possession. The preservation of the peace, which was the original object of civil government, was thus attained; while

by confirming, to those who already possessed it, even what was not the fruit of personal exertion, a guarantee was incidentally given to them and others that they would be protected in what was so.

In considering the institution of property as a question in social philosophy, we must leave out of consideration its actual origin in any of the existing nations of Europe. We may suppose a community unhampered by any previous possession; a body of colonists, occupying for the first time an uninhabited country; bringing nothing with them but what belonged to them in common, and having a clear field for the adoption of the institutions and polity which they judged most expedient; required, therefore, to choose whether they would conduct the work of production on the principle of individual property, or on some system of common ownership and collective agency.

If private property were adopted, we must presume that it would be accompanied by none of the initial inequalities and injustices which obstruct the beneficial operation of the principle in old societies. Every full-grown man or woman, we must suppose, would be secured in the unfettered use and disposal of his or her bodily and mental faculties; and the instruments of production, the land and tools, would be divided fairly among them, so that all might start, in respect to outward appliances, on equal terms. It is possible also to conceive that in this original apportionment, compensation might be made for the injuries of nature, and the balance redressed by assigning to the less robust members of the community advantages in the distribution, sufficient to put them on a par with the rest. But the division, once made, would not again be interfered with; individuals would be left to their own exertions and to the ordinary chances, for making an advantageous use of what was assigned to them. If individual property, on the contrary, were excluded, the plan which must be adopted would be to hold the land and all instruments of production as the joint property of the community, and to carry on the operations of industry on the common account. The direction of the labor of the community would devolve upon a magistrate or magistrates, whom we may sup-

pose elected by the suffrages of the community, and whom we must assume to be voluntarily obeyed by them. The division of the produce would in like manner be a public act. The principle might either be that of complete equality, or of apportionment to the necessities or deserts of individuals, in whatever manner might be conformable to the ideas of justice or policy prevailing in the community.

Examples of such associations, on a small scale, are the monastic orders, the Moravians, the followers of Rapp, and others: and from the hopes which they hold out of relief from the miseries and iniquities of a state of much inequality of wealth, schemes for a larger application of the same idea have reappeared and become popular at all periods of active speculation on the first principles of society. In an age like the present, when a general reconsideration of all first principles is felt to be inevitable, and when more than at any former period of history the suffering portions of the community have a voice in the discussion, it was impossible but that ideas of this nature should spread far and wide. The late revolutions in Europe have thrown up a great amount of speculation of this character, and an unusual share of attention has consequently been drawn to the various forms which these ideas have assumed; nor is this attention likely to diminish, but on the contrary, to increase more and more.

The assailants of the principle of individual property may be divided into two classes: those whose scheme implies absolute equality in the distribution of the physical means of life and enjoyment, and those who admit inequality, but grounded on some principle, or supposed principle, of justice or general expediency, and not, like so many of the existing social inequalities, dependent on accident alone. At the head of the first class, as the earliest of those belonging to the present generation, must be placed Mr. Owen and his followers. M. Louis Blanc and M. Cabet have more recently become conspicuous as apostles of similar doctrines (though the former advocates equality of distribution only as a transition to a still higher standard of justice, that all should work according to their capacity, and re-

ceive according to their wants). The characteristic name of this economical system is Communism, a word of continental origin only of late introduced into this country. The word Socialism, which originated among the English Communists, and was assumed by them as a name to designate their own doctrine, is now, on the Continent, employed in a larger sense; not necessarily implying Communism, or the entire abolition of private property, but applied to any system which requires that the land and the instruments of production should be the property, not of individuals, but of communities or associations, or of the government.—J. S. Mill, "Political Economy," Book II, Chapter I, Section 2.

CHAPTER II

PRODUCTION

7. *Production and producer defined.*—We have determined that wealth includes all those commodities and properties in the community which can be appropriated and which are desired by man. This property of being desired we may define as utility. Utility should be sharply distinguished from usefulness. Many goods may be extremely useful, such for example, as a gallon of water, but may have no value whatever placed upon them because they can be obtained without effort or sacrifice. A gallon of whiskey, on the other hand, may be extremely harmful and yet, because of its scarcity and the difficulty of producing it, as well as because of the strength of the appetite to which it ministers, may sell at $6. The science of economics, however, is not concerned with the usefulness of commodities. The only questions which it asks concerning a commodity are, has it utility, do men desire it, will they pay money for it or put themselves to trouble and inconvenience in order to obtain it?

We may now define the production of wealth as the process of increasing utility. Any act which directly or indirectly increases the utility or desirability of a commodity is an act of production. The farmer clears a piece of land, rendering it fit for tillage; he is a producer. The wholesaler buys goods from the manufacturer and sells them to the retailer in such quantities as the retailer may conveniently dispose of them to the consumer; he is a producer. The retailer places these

goods upon his shelves and sells them in many small quantities to the consumer; he is also a producer. Every person who is engaged in increasing the desirability of commodities is engaged in production. Every person who is engaged in increasing the utility of commodities, and this may be determined by ascertaining whether he is increasing the money value of commodities, is engaged in production. It is possible, without stretching the definition of production too far, to include among the producers, a large number of people who are not directly engaged in increasing the utility of goods. The policeman may thus be considered a producer; the school teacher who increases the efficiency of his pupils is a producer; the official who administers a public department concerned, let us say, with supplying pure water or light to a community, is also a producer.

8. *Forms of production.*—There are four principal forms of production. They include those acts which result in creating (1) utility of place, (2) utility of form, (3) utility of time, and (4) utility of possession. In the business life of the nation, the first set of acts is represented by transportation; the second by manufacturing; the third, by storage; and the fourth by trading and exchange. All of these activities are forms of production, as they each result in increasing the desirability or utility of certain commodities. There are familiar illustrations of these different means of production. The miner blasts out iron ore, conveys it to the surface of the ground, and ships it by rail and lake a thousand miles to the blast furnaces at Pittsburgh. These are acts of production. The ore is of no use either in the ground or at the head of Lake Superior where it was mined. At the foot of the Lakes,

however, it becomes of great value. The blast furnace operating near Pittsburgh purchases Lake Superior ores at the mines at about $2 per ton; carried to an upper lake port this same ore is worth $2.60; on reaching a lower lake port its value is $3.05 and at Pittsburgh, its destination, $4.05. These successive increases in price show the increase in utility which have resulted from the transportation of the ore from one place to another. At the blast furnace men convert the ore into iron by mixing it with coke and limestone and applying the action of heat to the mass. In iron smelting the object is to free the iron from oxygen and various impurities which are associated with it. This is done by mixing it with coke and limestone in alternating layers. The mass is then set on fire and the blast of air is forced through it to hasten combustion. The oxygen is released during the process, uniting with the rocky material in the iron ore and forming slag. The iron is thus set free and becomes heavier, gradually sinking to the bottom of the furnace, from which it is drawn off.

We have here production resulting in a complete change in form and a still further increase in value. Pig iron sells, say, at $16 per ton. This pig iron is still further de-oxidized and converted into steel ingots and into steel rails which sell at $28 per ton. From these acts of mining, transportation and manufacturing, creating place and form utilities, two tons of iron ore valued at $8 ultimately receive a value of $28. Instead of being made into steel rails, the steel in the form of ingots or bars may be shipped to Philadelphia. Again the change in place makes an increase in utility resulting in an increase in price, which corresponds roughly to the transportation rate between the two cities. In Phil-

adelphia the steel is made into boilers, another change in form. A boiler of standard quality, complete with fittings, weighing about 33,000 pounds, is worth in the neighborhood of $1,250 or about $76 per ton of steel which enters into it. These boilers are then shipped to a town in central Pennsylvania, another change in place, and a further addition to the utility and price. Set up and ready for use their value will have increased from $350 to $500, depending upon changes in location and condition.

9. *Time utilities.*—Time utilities are of less importance. Ice has in winter practically no utility, and but little of it can be sold. By the time warm weather arrives its utility has increased many fold. Wheat, just after harvest, ordinarily sells at much lower prices than after it has been kept during the winter. Here are examples of time utility, the increasing of the desirability of an article by holding it from one season to another.

10. *Possession utilities.*—Possession utility arises when a wholesaler sells goods to a jobber or when the retail merchant sells his goods to a consumer. By a change of possession the goods sold gain in utility, a fact evidenced by the increased price at which they are sold. A lot of hammers, for example, have a certain utility in the hands of the manufacturer, but the manufacturer has no means of marketing his products to the consumer. He therefore sells to the jobber, who finds it profitable to sell hammers to small retailers in dozen lots, because at the same time he may be selling to the same retailer five or six other items also in dozen lots. A gross of hammers in the hands of the manufacturer has, therefore, less utility than in the hands of the jobber.

The manufacturer may charge the jobber $46 for a

gross of hammers which the jobber in turn sells to the retail trade for $54, and the retailer sells the same hammers over the counter to customers for $72 a gross. Again, goods bought by a large department store in wholesale lots have one value. Assorted, artistically arranged and ready for sale in single units to the customer, they have a much higher value. The same illustration may be used to show that possession utility is increased when the goods in question are actually in the hands of the consumer. Because of this increase he is willing to pay a price high enough to induce the retailer to part with his goods. In this manner with each transfer of the goods from the possession of one individual to another, their utility and their price increases.

11. *Agents of production.*—There are three agents or factors in production, two primary and one secondary; the primary supplied by nature and by labor—that is to say, muscular or mental activity exerted upon or in connection with these materials and forces. The secondary factor in production is capital. This consists of all the commodities employed not for consumption but for purposes of future production. The nature of capital will be a matter for subsequent examination.

Production has already been defined as the creation of utilities. That man cannot create matter is a familiar truth. All that he can do is to rearrange particles of matter so as to create *form* utilities; or move goods from one part of the world to another so as to create *place* utilities; or preserve goods from one period to another so as to create *time* utilities; or, finally, transfer goods from the ownership of one individual to that of another so as to create *possession* utilities. Any activity which contributes to the creation of utilities in either of these ways is production.

A school of French economists of the eighteenth century, the Physiocrats, gave currency to the belief that agriculture is productive in a special and peculiar sense. They even went so far as to characterize manufacturing and mercantile pursuits as *sterile*, or unproductive. Adam Smith, writing in 1776, took vigorous exception to this view, but he, too, speaks of nature as "laboring along with man" in farming, implying that it does not "labor along with" him also in his other occupations. Completer knowledge of the real nature of production has emancipated most minds from these misconceptions. They reappear from time to time, however, in criticisms of the activity of merchants, who are said to create nothing, but to live, like parasites, by buying things for less and selling them for more than they are worth. The obvious reply to such attacks is that merchants create time, place and possession utilities and that human well-being depends as much upon these as upon the form utilities created by farmers and manufacturers. Convincing proof of the value of the services of merchants is furnished to city people when they go to live in the country in the summer and have to depend for the goods they require upon a distant and ill-stocked country store. The growing prevalence among country people of the practice of coming to town to do their shopping indicates, on the other hand, their practical appreciation of what the merchant does for the community.

As already implied, there are two essential factors in all productive processes: nature and man. Nature figures in production as an aggregate of materials and blind forces. Acting in conformity with invariable laws, she destroys as readily as she creates. Moreover, her productive services are always gratuitous to him who has the intelligence to command them. Man, on the contrary, appears as a being with conscious purpose. He also destroys—not ruthlessly, however, as nature seems to do, but in order to gratify his wants. In production man is the directing, active agent, nature the obedient, passive agency. Man marshals the materials and productive forces which nature supplies in the ways that experience has taught him to be best, and he alone enjoys the fruits of productive enterprise.

Man and nature are the primary factors in production; secondary or derived from them is *capital, the products of past industry used as aids to further production.* With the abundant evidence on every side of the dominant rôle which power machinery and other forms of capital play in production as now carried on there is little need to emphasize the importance of this third factor. To capital is chiefly due the efficiency of contemporary productive methods, as contrasted with those of one hundred and fifty years ago, and also the division of the working population into employers and employés. These truths are so familiar to everyone that it is not so much the importance of capital as the fact that it is not an independent but a derivative factor in production that requires emphasis.—H. R. Seager, "Economics: Briefer Course," pp. 60–62.

CHAPTER III

NATURAL AGENTS

12. *Free goods of nature and their transformation.*— In our study of production we have first to examine the function of nature in the production of wealth. Of the commodities which are fitted to supply human wants, some grow up spontaneously as the free gifts of nature without any labor being expended upon them. Examples of such commodities are shellfish, berries, fruit and nuts. In the tropics, the profusion of natural products is so great that man can subsist without exerting more labor than is necessary to gather the fruit from the trees and the fish from the shore. Fruits and nuts in great profusion and almost endless variety fall or hang from the trees. The streams swarm with fish, which can easily be caught at all seasons of the year. Game also is abundant. Cold is unknown, clothing and shelter almost superfluous. Under such conditions man does not need to work and he is content to sleep and idle his life away, sustaining himself without working. Generation after generation, century upon century find him still in the same condition of drowsy indifference. Progress and improvement are not thought of, because the inducement is lacking. Man is entirely comfortable and secure in his comfort. Man is by nature little more disposed than the lower animals to hard work and strenuous endeavor.

In the colder regions conditions are different. Here the climate is harsh and inclement. The winters are

severe, locking up land and water in snow and ice. The spontaneous productions of the forest are less abundant and must be won with more labor. In the North man must work and work hard in order to live. Unless he works and plans, unless he denies himself present satisfaction in order to provide for future wants, he will perish. Compelled to exertion, he begins to subdue the difficulties which encompass him. He builds houses for shelter. He provides clothing. In order that food may always be at hand, he develops agriculture and domesticates animals. By slow degrees he organizes civil society, so that by the united strength and coöperative effort of many hands his hard task may become easy. In short, he begins to get the better of the physical conditions of soil, climate, vegetation and animal life which surround him. He becomes, as we say, master of his environment. It is in those regions where means of subsistence can be provided only by labor, that we find the great civilization of the world.

13. *Changes in form and place required by production.*—Generally speaking the materials supplied by nature are only available for human use after changing their form or their place. There is little resemblance between a lump of iron ore and a coil of wire, between a bag of cocoons and a bolt of silk, or between a pile of sand and a pane of glass. Almost every commodity, before it is ready for human use, must be subjected to a long anterior series of transformations and manipulations. Consider, for example, the process of producing a loaf of bread. The ground must be cleared, ploughed and harrowed, planted with seed, cultivated, the crop harvested, the grain threshed, carried to the mill, ground and bolted, and finally the flour must be mixed and the bread baked.

Although the materials supplied by nature must usually be transformed before they are fit for consumption, the substances out of which these goods are made are derived from the ground, the forest or the sea. Without an abundant supply of these materials, production is small. The rapid increase of industry in the United States, and the assured industrial future of this country rest upon the foundation of abundant raw materials. In fuel of all kinds, in all metallic ores, in lumber and in the products of agriculture, the United States is better provided than any other region in the world. Out of these materials the energy of the American people, assisted by the progress of invention and improvement and helped also by capital contributed by Europe, has created within one hundred years the most prosperous industrial nation the world has ever seen.

14. *Latent powers of nature.*—Nature supplies to production not merely materials but also forces and natural properties of which man makes large and increasing use in production; without whose aid indeed production, as we now understand it, would be impossible. The universe about us is a vast reservoir of power. Power almost unlimited is latent in the coal mines which contribute each year to the service of man only the minutest fraction of their stored-up energy. Because it is the principal source of power, coal is undoubtedly the most important of all mineral raw materials of industry. In this age of steam-driven machinery, coal represents power, and where nearly every manufacturing process is conducted on a large scale in huge mills and factories, cheap coal is essential to economical production. At every stage of the economic process coal is our servant. It smelts the iron out of which our agricultural, milling and transporta-

tion machinery is made. It transports the grain to the mill and grinds it into flour. It carries the flour to the customer and finally converts it into bread. Coal weaves our clothing, saws and planes our lumber, fluxes our hard metals into workable condition, and performs for us almost every act and process of our modern life. "This has been called the iron age, and it is true that by its strength, endurance and wide range of qualities iron is the material of novelties and is fitted to be the fulcrum and lever of works, while steam is the motive power. But coal alone can produce in sufficient abundance either iron or steam; coal, therefore, commands this age—the age of coal. Indeed, coal stands not merely beside but entirely above all other commodities. It is the material energy of the country; the universal aid, a factor in everything we do. With it, almost any feat is possible; without it, we are thrown back into the laborious poverty of early times." [1] Power is more visibly seen in the rush of streams and in the heaving tides. The sun is every day pouring great cataracts of power upon the earth. Compared with the power and force of nature, the strength of men and animals is insignificant.

Most important of these natural resources are the forces of the soil called into action by heat and moisture, whose operation is illustrated by the varied and manifold processes of agriculture. Single acres of land may yield under scientific farming as much as 1,300 pounds of cotton or 100 bushels of corn. The force of heat is present in all metallurgical operations and also the generation of steam. The force of gravitation is now utilized in water power. The total horse power employed in manufacturing in 1909 was 18,680,776. To

1 "The Coal Question," W. S. Jevons.

supply this demand, it is stated that Niagara Falls is capable of developing between six and seven millions of horse power, and Niagara, though the largest, is only one of many falls in the country. Steam and water power are transmitted into electric power, which is sent long distances from the place of generation. One of the water power companies of Niagara Falls supplies a considerable amount of electric power to Buffalo. The Buffalo Street Railways are operated by means of this power, bake shops are run, street and house lighting is supplied, grain elevators are operated and factory power is provided.

15. *Importance of properties of matter in production.*—In addition to these natural forces, a large number of qualities or properties of goods play an important part in production. It is the ductility of copper that gives that metal its high commercial value. There are other metals which are good transmitters of electricity, but they fail to be of service to man in this capacity, because they cannot readily be drawn out into wire. Hardness is an invaluable quality. The value of steel, for many uses, increases in direct ratio with its hardness. Again, there is the property of malleability by virtue of which property, iron and steel can be flattened out into large sheets. Tenacity is another valuable property of matter. It is the tenacity of steel which makes possible our skyscrapers and gigantic steel bridges. The force of cohesion makes possible the manufacture of cloth. These properties, along with many others, constantly play important rôles in the industrial life of man.

In proportion as man has succeeded in getting mastery of these natural forces and in utilizing the various properties of matter, has material civilization developed.

This task of subjugation is, however, far from being accomplished. Only a small fraction of the power available in nature is at man's disposal. For example, only 10 per cent of the heat latent in coal is now utilized in the process of combustion. Even this small amount of power which man has, and the incomplete utilization of the contributions of nature to production, have been sufficient to lift from his shoulders much of the burden of hard toil by increasing the efficiency of his efforts one hundredfold. Our food, our clothing, our houses and our business are all conditioned by and dependent upon the use of power and the properties of matter.

In a general way nature may be said to assist in production by furnishing man with standing-room, with materials, and with chemical and physical forces. The motor forces of nature have been utilized by man principally in the forms of the muscular strength of animals, the motive force of winds and streams, the expansive force of steam, and the motive force of electricity.

A detailed classification of nature's contributions to production may next be presented. *First*, all productive industry may be influenced by atmospheric or climatic conditions. These affect not only the animal and vegetable productions of a country, but also the vigor and character of the inhabitants. *Second*, rivers, lakes, and seas should be mentioned. These may facilitate the transportation of persons and products; and may furnish man with fish, coral, sponges, etc. Rivers may also supply the water power that turns the wheels of many productive industries. *Third*, we must notice the contributions of the land surface of the earth. The land contributes to production standing-room, plants and animals, mineral treasures hidden for the most part below the surface, and the mineral and vegetable elements that form fertile soils. Mere situation is often of the greatest importance, as is seen in the case of a city or country

located at an important point along the routes which the commerce of the world is obliged to follow.

Of the contributions of nature to production some are appropriable, while others practically cannot be reduced to ownership by individuals or by societies. Land is appropriable, as well as the products secured from the land. Air and sunlight are for all practical purposes not appropriable, except in so far as the enjoyment of them may depend upon access to certain pieces of land. The waters of the earth's surface cannot be appropriated, except in cases where access to them depends upon the control of land. Inland waters and the borders of the ocean to the extent of three miles seaward are appropriated by the nations that control adjacent territory. The appropriable contributions of nature are actually reduced to private ownership as soon as they become scarce relatively to human wants. When population is scanty, and men lead a nomadic life, land is not held as private property. But as numbers increase, and unoccupied land becomes scarce, the soil is brought under private ownership.

Some writers have attempted to explain the whole of man's social as well as his economic life by reference to the influence of the natural surroundings of each community. In this way it is said that the inland plains give rise to a pastoral form of economic life, that the seashore causes people to live as fishermen, and that forests produce the tribes of hunters. From the natural affiliation or combination of these three forms of simple economic societies, all complex or civilized societies are derived. But such a view exaggerates, as it is very easy to do, the extent to which natural surroundings determine the life of a people; and it neglects the fact that man in a thousand ways may modify his environment. Man can reclaim land from the sea, can irrigate arid lands, can tunnel the Alps, and can construct a railroad through the Rocky Mountains or across the Andes. The economic development of our own country has been very greatly influenced by natural conditions. The infertility of the soil of New England compelled that section to utilize its forests for ship building, and its rapid streams for power

for manufacturing. The fertile soil of the South marked that section out as an agricultural region. The rivers of the Mississippi Valley helped to extend settlements, and to facilitate the rapid growth of the interior of our continent. In general, it may be said that the tendency of economic progress is to free man more and more from the influence of nature. It took nearly two hundred years for English colonists to advance their settlements from the Atlantic coast to the valley of the Mississippi. But the steamboat and the railroad enabled the people of the United States to spread over the territory between the Alleghanies and the Pacific in three-quarters of a century.[1]

[1] C. J. Bullock, "Introduction to the Study of Economics," pp. 118–121.

CHAPTER IV

LABOR

16. *Labor defined.*—Labor may be defined as physical or mental exertion directed toward the production of wealth. The two forms of exertion are generally united. Most forms of so-called brain work require some muscular activity, and the lowest manual labor requires a certain amount of intelligence. There is little need, therefore, to discriminate between the respective contributions of brain and muscle to production. This may be proven by any one who takes the trouble to watch the working of common laborers. Men are frequently found who do double the work of other men solely because in using the pick or the shovel, or trundling the wheelbarrow, or carrying the hod, they put intelligence into their work. To look at the matter from the other side, the labors of some of our greatest thinkers, such as Herbert Spencer, Prescott and Pasteur have been seriously hampered by physical infirmities, and the achievements of Mr. Gladstone were only made possible by a splendid physical constitution.

17. *Analysis of labor.*—Labor consists of putting things into motion. All that motion does in production is to change the position of things.

If we examine any case of what is called action of man upon nature we will find that the power of nature or the property of matter do all the work, when once objects are put into the right position. This one operation of putting things into fit places for being acted upon by their own internal forces, and by those

residing in other natural objects, is all that man does, or can do, with matter. He only moves one thing to or from another place. He moves a seed into the ground, and the natural forces of vegetation produce in succession a root, a stem, leaves, flowers and fruit. He moves an axe through a tree, and it falls by the natural force of gravitation; he moves a saw through it, in a particular manner, and the physical properties by which a softer substance gives way before a harder, makes it separate into planks, which he arranges in certain positions with nails driven through them, or adhesive matter between them, and produces a table, or a house.[1]

18. *Qualities that determine efficiency.*—The qualities which determine efficiency of labor may be classed under three heads: physical, mental and moral. Included in the first are health, strength and energy. The mental qualities may all be included under intelligence, and the moral qualities under honesty, ambition and perseverance.

19. *Physical efficiency.*—The laborer's physical efficiency depends upon two factors, inheritance and environment. The races of man differ widely in their physical capacities for production. It has been observed that the Slav, the Pole or the Hun, is physically much stronger than the Italian, and is capable of much heavier work. On the other hand, the Italian is more painstaking than the Slav. This gives the Slav an advantage in rough, heavy work, such as coal mining, and it gives the Italian an advantage in truck farming and other forms of intensive agriculture which require close attention and careful supervision.

The laborer's efficiency is also very largely influenced by his environment. By this term "environment" we mean all of the conditions under which the laborer lives.

1 "Principles of Political Economy," J. S. Mill, p. 16.

In order that he may do his best work, he requires good and abundant food, clothing suited to the climate, pleasant home surroundings, clean streets, pure water, good government and wages sufficient not merely for comfortable subsistence but also for saving.

The necessity of securing a proper physical environment is now generally recognized, and is the basis of what is known as "welfare work," or betterment work, which is carried on by large employers of labor and also by means of legislation and administration which is undertaken by the state. The industrial betterment movement in the United States is of comparatively recent origin. It is only within the last decade that the subject has been given any attention, and its general establishment has been even more recent. Employers are now coming to recognize that consideration for the welfare, safety and loyalty of their employés is an important factor in commercial success. Men do not engage in business from philanthropic motives, and modern methods of factory management must be based not on sentiment but on sound economic principles. The object of any industrial enterprise is to make money for its owners. In order to do this, expensive machinery is placed in the factory where it will do its best work; it is protected from dust, kept well oiled and in good repair. In like manner, workmen who operate machinery must be kept in good condition if the employer is to receive the greatest return for the wages he pays. Good light, pure air, cheerful surroundings, cleanliness, provision for a reasonable degree of comfort, all these things have a commercial value. The more favorable are the conditions under which work is to be performed, the higher will be the type of work-

men attracted to the plant, and the more permanent will be their service.

The United States has more factories of this character than any other country in the world. Massachusetts manufacturers were the first to interest themselves in betterment work. They were soon followed by manufacturers in the middle western and western states, and last of all have the southern manufacturers adopted the same policy. To-day some form of industrial betterment finds a place in most successful factories and mills.

20. *Importance of safe and sanitary surroundings.*— The most evident illustration of the general interest in industrial betterment is in the effort to obtain order and cleanliness in and about the works. New buildings are usually built with large window space admitting abundant light and air. Many firms have gone far in beautifying the surroundings of their works and have found the results very satisfactory.

The most important phase of the industrial welfare movement is, however, due to the increased interest in safeguarding operatives from accidents. Factory legislation during recent years has done much to reduce the danger of accidents, but there are still far too many of them. Manufacturers are not eager to supply safety devices upon machinery which is already expensive, and operatives on piece work resent any appliance which is likely to restrict the output. A serious accident must sometimes bring workmen to their senses, before they appreciate the value of a device installed for their own protection. This prejudice against safety appliances is, however, rapidly being overcome.

Great financial loss, especially during periods when labor is scarce, may result from ill health of employés.

An epidemic of typhoid fever among the operatives of a large mill during 1906 was justly regarded as a calamity similar in destructive effect to a fire or flood. In the best works great care is taken in accepting only those employés who are physically sound. Those already employed who are affected by tuberculosis are especially provided for, an effort being made to isolate them from other employés, while new applicants are not accepted. Persistent efforts are being made to combat alcoholism. Some of the largest employers of labor will not employ drinking men and have even carried their opposition so far as to discharge employés who are seen entering a saloon. The hygienic conditions of the factory receive closest attention. Wash rooms with individual basins are common. and even shower baths are sometimes provided. Ventilated closet lockers are now considered necessary. One factory attracted a large number of employés from a neighboring works by putting a steam pipe under its closet lockers. Workers arriving on a wet morning changed their wet clothes and shoes for others dry and warm and at night found their street suits thoroughly dried for their return home.

Medical service, ranging from the treatment of small diseases and facilities for rendering first aid to the injured, up to hospitals with complete equipment, is provided in modern factories. The Colorado Fuel and Iron Company has a splendid hospital at Pueblo in addition to simpler forms of medical relief in the various camps. The Illinois Steel Company at South Chicago maintains a hospital with constant medical and surgical attendance.

21. *Views of a work's manager on industrial betterment.*—These improved systems are described as fol-

lows by Mr. Alexander E. Outerbridge, Jr., in an article published in the *Annals of the American Academy of Political and Social Science* for January, 1903:

Another important consideration of such innovations as the premium system is a care for the well-being of the employés. In my discussion of business and philanthropy I do not wish to be misunderstood or to seem to under-rate the advantages which may accrue to employés, as well as to employers, of philanthropic plans devised for the aid of sick, injured or infirm operatives. In one of the largest and most successful manufacturing establishments in the world an admirable system is in vogue whereby unfortunate men are helped in time of need, but so judiciously and secretly is this done that the world knows nothing about it, and if I should name the establishment it would violate confidences that I have received, not from the managers of the works, but from men who have been thus aided in a way which has not awakened any other feeling than that of gratitude. You cannot find any allusion to these matters in the rules posted up in the works, and in fact, I believe there are no rules on that subject. There is no contract in existence; there is no guarantee that if a man is injured, or if he is sick, or in trouble, that the helping hand will be extended to him, yet I doubt not that every one of the thousands of men employed in those shops goes to his daily work with a contented feeling that should an accident befall him while on duty, his family would be cared for while he might be incapacitated for work. It thus appears evident from whatever point of view the question may be studied that the value of the "personal equation" in the management of large industrial works is a most important factor in the successful conduct of affairs.

Moreover, my views are pronouncedly towards recognizing the responsibility which rests upon the employer to the fullest extent practicable, not, however, based upon philanthropic grounds, but because observation has taught me that one of the most profitable investments of money that can be made in a manufacturing plant is to give the largest possible advantages,

in the way of conveniences and sanitary arrangements, etc., to the operatives. I remember years ago finding it a difficult matter to impress upon the superintendent of a foundry the importance of having the windows washed. They had not been washed for years, and on dark winter days the dimness in the foundry necessitated artificial light; indeed at all times the conditions were bad for the eyes of the moulders. I had a great deal of trouble to get those windows washed, and yet I am quite sure that the cost was repaid in a very few days in the saving of bad work. The introduction of steam heat into another foundry that I am familiar with was a source of expense that the managers were loath to incur, but that was also a profitable improvement; it avoided irritating and blinding smoke in the foundry on cold mornings caused by lighting wood shavings on the dirt floor; not only did it contribute to the comfort of the men, but the steam heat kept the sand warm, and the moulds did not crumble as formerly by reason of the freezing of the moisture in the sand on cold nights. The introduction of shower baths, dressing rooms, water closets, and other similar comforts and conveniences, improves the character of the work and conserves the health of the workmen. I maintain that every operative who gets sick in the employ of a concern causes more or less loss, even though he may receive no wages during the time he is incapacitated for work; another and presumably an inferior or less experienced man must be put in his place and the interests of the firm must therefore suffer. For this reason I believe that every kind of legitimate comfort and convenience that may be provided for the operatives is a source of profit to the employer altogether apart from the moral obligation to care for the health and comfort of the employé.

22. *Factory legislation.*—The safeguarding of the health, safety and comfort of employés is not left entirely to the self-interest of the employer. The state has taken cognizance of these necessities in a large number of so-called factory laws.

There is not a state in the Union that does not have

some factory legislation. In many states the laws go into great detail. It requires almost a thousand pages of a finely printed government report to contain the factory, woman and child labor laws of the respective states. Unfortunately, all the laws of the various states do not show the same amount of wisdom and breadth of view but there seems to be a growing tendency toward greater uniformity and higher standards.

The factory law proper usually includes sections on fire escapes, fire extinguishers, safety devices on elevators, guards for machinery and similar subjects. Labor laws usually include certain restrictions on woman's labor. She may not engage in certain occupations, e. g., manual labor in or about any mine. She is prohibited from working over a definite number of hours per day and per week. Often seats and other physical comforts are guaranteed her by law. The state thus limits her freedom of contract on the ground of the future welfare of the race. The courts have upheld this course as part of the police power of the state.

The child labor laws usually include four important points: First, the age under which a child can work under no considerations, usually fourteen years in the northern states. Second, the requirement that between fourteen and sixteen years the child may not work unless it has proven its age and has a school certificate that it can read and write the English language. Third, night work is usually prohibited, if not entirely, then in part. Fourth, the number of hours per day and per week are prescribed. These vary considerably. In New York they are eight per day and forty-eight per week.

The circumstances influencing health and strength are well understood. Fresh air and exercise, good food, adequate pro-

tection from dampness and sudden changes in temperature and the avoidance of all kinds of excesses, are the principal requisites. Of these good food is perhaps the most important. The human body resembles a machine, and the amount of work it can do depends very largely on the quality and quantity of the fuel, that is, the food, with which it is supplied. At the present time vigorous measures are being taken in all progressive countries to provide the requisites to health and strength for all classes. Sanitation and factory acts have been passed to insure the healthfulness of the conditions under which men work. A great deal of attention is being given, especially in those countries which maintain large standing armies, to the question of determining what diets are best for people doing different kinds of work, and model kitchens are being organized in the poorer quarters of cities to teach people to appreciate nutritious and properly prepared foods. Efforts to improve the tenement houses in which the populations of the larger cities live are also being put forth and with some success. Mention should also be made of the public baths, the playgrounds for children and the open-air gymnasiums which are being erected in those cities in Europe and America which are most progressive in caring for their inhabitants. Finally, it would be difficult to exaggerate the importance of the efforts that are just now being made to stamp out two of the most devastating diseases from which the human race has suffered, yellow fever and consumption. As is shown by mortality statistics, these efforts are beginning to bear fruit in the improved health of present-day city populations, but much yet remains to be done for both city and country people. There is no form of philanthropic activity which is more certain to benefit mankind than that designed to improve the conditions under which the mass of men live and work. Restored health and vigor are blessings in themselves, but equally important is the fact that they make for more efficient production and enable their possessors not only to hold what they have gained, but to add steadily to their advantages through their increased earning power. Every improvement that can be made in home and factory surroundings without undermining the independence and

self-respect of the population is thus a certain means of "helping people to help themselves." [1]

23. *Extra-business relations between employers and employés.*—This subject belongs rather to the field of Sociology than to that of business management, but owing to its bearing upon the management of industry it will here be considered. It is a proposition almost self-evident that the employer's interest is furthered by his possessing the good will of his employés. No man will work so well for wages alone as he will work when, in addition to the wages he receives, is added the consciousness that his employer is interested in his welfare; that he will promote him as fast as he deserves it; that his employer will care for him in sickness, and, so far as possible, look after his family in case of his death; that his sons will have the preference when vacancies occur in the mill; that he will be fairly paid for overtime; that his wages will increase with the profits of the business, and, in general, that his employer will do to him as he, the employer, would wish to be done by were the positions reversed. Many firms and companies bear just those relations to their workmen, and it need hardly be said that they do not lose any money by their policy of kindness. Few businesses are so large that the employer cannot know something of the circumstances of his subordinates, and friendly interest is an outlay which never fails to bring in large and quick returns.

Let us explain more fully as to particulars. The employer owes to his employés healthful surroundings; large and light rooms with plenty of air space and good ventilation, well warmed in winter and when possible cooled in summer; he owes them the best sanitary conveniences, and he will not go far astray if he provides

[1] H. R. Seager, "Economics: Briefer Course," pp. 74–5.

lockers for their street clothing. He further owes it to his employés to protect them, as far as possible, from the risks incident to their occupation; to put railings about dangerous machinery, to case belts, to put guard rails on stairs, to sand slippery floors, and to see that boilers are regularly inspected. It is an employer's duty to do these things, and for fear that short-sighted or penurious men should neglect to do them, the law insists that they shall be done, prescribes penalties for neglect to obey its commands, and employs inspectors to see that these regulations are obeyed. The employer further owes to his employés reasonable hours and living wages, and he owes it to them and also to himself to take a friendly interest in their welfare. These matters have already been noticed.

The question now arises, Shall the employer go further than this? Shall he do more than self-interest directs; shall he provide libraries, gymnasiums, baths and amusements for his workers, as some employers have done and as most people think that all employers should do? There is no hesitation in answering in the negative. Philanthropy of this sort is altogether out of place and tends to pauperize the recipients. A man works for wages. The self-interest of his employer and common friendliness and humanity demand that the worker be kindly treated and assisted in misfortune. But to go further than this is not demanded. It is far better for workmen to provide such things for themselves than that they should be presented with them. If living wages are paid, a margin will usually remain for luxury and amusement. Experience has shown that workmen prefer to take their wages in cash rather than in part cash and part philanthropy.

CHAPTER V

TRAINING OF WORKERS

24. *Mental efficiency of labor.*—The intelligence of workmen is largely dependent upon his inheritance. Thus negroes are proverbially stupid, and the Irish quick and alert. Each nationality differs from every other in the ability of its members to think. Artistic ability seems to be possessed in larger measure by the French than by any other nation; the Germans, on the other hand, are more painstaking and thorough in their mental processes than any other nationality.

Although intelligence depends primarily upon inheritance, mental efficiency can be greatly increased by education. It is especially important, and this has not as yet been generally recognized in the United States, that a common school education should contain the largest possible amount of practical training. Manual training should be taught in the lower grades, and more advanced technical instruction in the high schools. Education, especially of a practical character, may be looked upon as capital invested in the coming generation. It makes individuals more valuable, not merely to society, but to themselves. Formerly, in the home and in the shop, the boy received a quite complete training, not merely general but qualifying him for some handicraft. In the growing specialization in industry, however, and especially with the organization of industry into large factories, such opportunities for training have

nearly disappeared. The public schools are, therefore, obliged to take upon themselves new obligations. The technical school and manual training high school have been grafted on our educational system to meet the demands for.

boys who possess trained hands and eyes, . . . boys who are able to plan and to execute, boys who are industrious and not afraid of overalls and jumpers—boys who have, to a high degree, the power of applying knowledge to industrial operations. The value of a good home in the building of character is not minimized or called into question, but the changed environment in and about the home, its complete isolation from productive industry, cooking excepted, has caused it to lose its leading position as a factor in industrial training. . . . The boy who goes into the shop in early youth must be taught neatness and accuracy; he should understand the elementary principles of wood and metal working, mechanical drawing, algebra, geometry and have a fair command of the English language. If the boy can be kept in school until the end of his sixteenth year, this amount of training can be given to him. . . . I believe that the value of this work has been underestimated. Technical education was introduced before manual training, and when the latter was first recognized it found place only in the high school. Gradually, grade by grade, it has crept down toward the kindergarten until in a few American cities, manual training is found in each of the twelve grades. The universal introduction of such work into the public school system should be demanded by clear-sighted employers and labor leaders; but in order that the young man may reap the benefits the school age must be raised. If the employer and the employé will unite on this proposition, it will mean much in the future. The interests of both are certainly harmonious in this instance. A well-trained class of workmen means the maintenance of industrial supremacy and the greater likelihood of peaceful relations between employer and employé. Ignorant, inefficient and

sweated laborers are a menace to industrial growth and development.[1]

25. *The money value of education.*—Mr. J. M. Dodge of Philadelphia, in a noteworthy paper entitled "The Money Value of Technical Training," has computed the capital value of four classes of employés, each according to the amount of preliminary instruction which they have received. The first group he calls the unskilled labor group, the second the shop trained or apprentice group, the third the group trained in trade schools, and the fourth, the group educated in the higher technical schools. The unskilled laborer, with but primitive training, works under the immediate supervision of a boss and earns at the age of twenty-two $10.20 per week. This amount represents $530.40 a year, or capitalized at 5 per cent $10,608. This sum, then, $10,608, is the capital value of the unskilled laborer; in other words, it represents the amount which he is worth to himself, and also to the community.

The apprentice starts in at $3 per week, and is worth about $3,000 at the outset. At the age of twenty, he is earning $9 per week, and his worth amounts to $9,000. From the age of twenty to twenty-one and a half his pay is increased to $13.20 and his potential value to $13,200. At the age of twenty-four, he earns $15.80 per week and his value is $15,800. In other words, in eight years, the capital value of the shop trained apprentice has increased $12,800.

The third group is composed of those young men who enter a trade school at sixteen years of age, and devote the next three years to acquiring a trade under competent instruction. At the age of nineteen, a trade

[1] Frank T. Carlton, "The Industrial Value of Manual Training."

school man enters the machine shop, and he can command $12 per week, equal to the apprentice at twenty-one years of age. The three years at school have increased his value from $3,000 to $12,000, a gain of $9,000; thus he has caught up to the apprentice entering the shop at sixteen and who has been working for five years. Continuing the comparison, at the age of twenty-four the trade school graduate is earning $20 per week, with a potential value of $20,000 or $4,200 greater than that of the shop trained man. He increases his earnings up to $22 per week, a potential value of $22,000, and he does not, as a rule, go much further. The members of the third group are worth, therefore, on the average $6,200 more to themselves than the members of the apprentice group, solely as a result of their more thorough preliminary training.

The fourth group is represented by a boy of sixteen who studies in a high school until his eighteenth year, preparing for admission to some technical institution, such as the Massachusetts Institute of Technology, Stevens Institute, or Cornell. Here, after four years of training, he is graduated at the age of twenty-two, ready to begin practical work. His wages at starting are $13 per week, or the same amount earned by the apprentice at the age of twenty-one and a half and by the trade school group at nineteen and a half. He has apparently lost by his six years of preparatory study, being six months behind the apprentice, and two and a half years behind the trade school graduate. The graduate of the technical school, however, increases his earnings very rapidly. Within six months his wages rise to $14 per week, and he reaches $15.80 per week nearly one year before the regular apprentice. In three years' time, the technical graduate earns $22 per week,

surpassing the members of the trade school group, and his earnings continue to increase until at the age of thirty-two, ten years after entering upon his practical work, the technical school graduate earns $43 per week and his potential value is $43,000. Six years of preparation have enabled him to far outstrip the shop group and the trade school group.

26. *The place of mind in production.*—The reason for the larger earnings of the trade school graduate, as Mr. Dodge explains it, illustrates the place of mind in production. Higher education, other things being equal, carries with it the ability to earn these large salaries, because these technically trained men are "directing and making it possible for large numbers of laborers, shop trained men, and trade school graduates to perform useful work. The draftsman at his board may never realize that as a result of his drawing a hundred men or more are given employment. His design calling for structural steel, for example, could not be built were it not for the labor of many men employed in making and rolling the steel before it reaches the shop. Then comes the shop men to cut, punch and shear; then the erectors to assemble the structure in accordance with the original plan. For this ability and knowledge our technical man is paid."

27. *The importance of training for business.*—Preliminary training is just as important in the field of business as it is in the field of technical industry. The average high school graduate is a more successful business man than the man whose education does not extend beyond the grammar grades. The graduate of a university is on the average far more efficient than the high school graduate. No matter into what branch of activity a young man proposes to enter, he will find it a

most excellent investment to spend money upon preliminary training.

The man who succeeds in business must be first of all a man who can think, reason and plan. A man who knows merely the routine of a grocery or hardware store, who knows how to keep a set of books, arrange a stock of goods, or make out and send a bill to a customer, has acquired useful information which will enable him to make perhaps $40 a month. But if this is all he possesses as an equipment for business, he cannot hope to win the highest success. Success in business means much more than a mere knowledge of routine. It implies, above everything else, the power to think independently in one's chosen field, the ability to answer such questions as these: If I am a butcher in a small town in Pennsylvania, shall I accept an agency from Armour and Company, or shall I depend upon the surrounding country to furnish me with supplies? If I am a miller in Ohio, shall I introduce the roller process or stick to the old method? Or shall I change from steam to gas for my power plant? If I have men working for me, shall I pay them just the current rate of wages and work them as many hours as they will work, or will it be economy for me to shorten their hours? If I am a grocer, shall I deal in staples only, or put in a line of fancy goods? If I am a dry goods dealer, shall I take an agency for a catalogue house or fight the catalogue house with my small capital? These questions and others like them are constantly arising in every business man's experience. The men who succeed in business are the men who answer such questions correctly, and they are also the men who are able to reason and discriminate.

Reasoning is, as its name implies, the act or process of finding out the reasons for things. The reasoner

constantly asks himself: Why is this fact as it is instead of some other way? His punctuation is all question marks. He may care very little about the way to paint an iron bridge; he may never have a bridge to paint; but he ought to be interested to know why an iron bridge should be painted at all, because if he and his fellow citizens are not informed, the neglect of some county commissioner may cost the taxpayers a new bridge. Possibly he cares very little how to make the contracts for stone and gravel for the country road; but he should understand why a macadamized road is needed and why any but the best road is a waste of public money. How to do it is a lesson which must be learned differently in every business establishment and which, if the learner is alert, he is not long in mastering. Why it should be done is a lesson far more important and far more difficult.

28. *Demand for university trained men in business.*— Of recent years there has been in the United States a very considerable demand among members of the commercial community for university men. This applies particularly to men with a technical training, but it is expected of them that they shall be more than mere chemists, engineers, etc. Their education is to fit them for dealing with men and managing businesses. With a view to this end, they study economics, generally of a very practical kind; the methods and policies of the large trusts, the organization of labor and its relation to industrial management, the modern problems of industrial finance, such as the advantages and disadvantages of issues of common or preferred stocks or bonds, the reasons for making improvements out of capital, or out of profits, and the negotiations for underwriting a new issue of stock or bonds.

Railroads, insurance companies, brokers and banking houses are among those who are anxious to employ college men. Along some lines, the demands are so great that the universities cannot supply sufficient graduates. Thus the New York banking houses are anxious to obtain men with a good economic and statistical training to work in their investigation departments, which make very careful inquiries before the firms enter upon any scheme for underwriting the new stock and bond issues of any railroad or industrial concern. To meet this demand of the business world certain universities have introduced courses whose aim is to provide just such training. As an example a description may be given of a few of the evening lectures in the New York University School of Commerce, Accounts and Finance. In the class in Business Organization and Statistics, a study is made under the guidance of a trained accountant of the internal management of a large business; the differentiation of the duties of the various departments, the advantages of various methods of organization as regards economy and the preservation of goodwill, trade-marks, local interests, etc. The course treats of the organization of corporations controlling different branches of industry, the relation of one branch to the others, and the relation of each to the parent company. In view of the complex character of modern commercial and industrial undertakings in America, a course of study along the lines indicated can be of great advantage to young men who are aspiring to managerial positions.

29. *Effect of machine industry upon labor.*—Modern industry is machine industry. The principal work of skilled labor is in directing highly specialized machinery. It has been claimed that the effect of this narrow

specialization upon the workman is injurious. There can be no question that this objection to machinery is to some extent well-founded. The man who works at one machine for twenty years must, in the nature of things, become likewise mechanical. To a large extent he loses the power of independent thinking and the power of initiative. On the other hand, the effect of machinery has been to increase so considerably the earnings of the working class that it is possible for them to obtain a thorough common school education, and in many cases, a high school education, before entering upon their work. This preliminary training will more than offset the narrowing influences of subsequent specialization of their life work.

Many large establishments, such, for example, as the Baldwin Locomotive Works of Philadelphia, have recognized the narrowing influence of extreme specialization and have arranged for a system of apprenticeship by which young men can be given an all-round training in their shops, in order that they may be qualified to serve as bosses and foremen. Mr. S. M. Vauclain, superintendent of their enormous works, has described their apprenticeship system in substantially the following words:

30. *Apprentice system of Baldwin Locomotive Works.*—The system as in vogue divides the apprentices into three classes:

(a) First-class apprentices are required to have a good common-school education and are not to be over seventeen years and three months of age. They are indentured for four years; and are required to attend a free night school for at least two evenings in each week during the first three years of the apprenticeship. The first year the apprentice is expected to take up ele-

mentary algebra and geometry; and the rudiments of mechanical drawing during the remainder of the two years.

(b) Applications for indenture in the second class of apprentices are from boys who have an advanced grammar or high school training and who are not over eighteen years of age. The term for this class is three years, and the apprentices are required to attend a night school which shall teach them the rudiments of mechanical drawing for the first two years of indenture.

(c) Third-class indenture; this is in the form of an agreement with young men of twenty-one years of age who are graduates of colleges, technical schools, or scientific institutions, having courses in the higher mathematics, natural science and drawing. They are not required to attend any night classes, but in lieu of this they must read some technical journal and turn in a synopsis of the articles. This matter is used for indexing the articles in the publication. The indenture in each case places upon the firm the obligation to teach the apprentice thoroughly his art, and to furnish him abundant opportunity to acquire a practical knowledge of the business. The employer is also bound to retain the apprentice in service until he has completed the term provided for in the indenture, with the reservation of the right to dismiss the apprentice for cause.

The apprentices are changed every three months, and the first-year apprentice is given experience of such an extended character as to make him a first-class and thorough mechanic. At the end of his service he is given a bonus of $125; he is then at liberty to sever his connection with the works and has the means of traveling half-way across the continent in search of a job satisfactory to him.

The course for the first-class apprentices is designed to develop first-class mechanics, and men for all positions of minor responsibility; the object of the course for the second class is to develop men for the positions of contractors and sub-foremen. The assistant foremen, foremen and executive staff, are developed from the third class of apprentices, although no limitation is placed upon the height to which the members of any class of apprentices may aspire or rise, and the first class of apprentices may, and in some cases, do rise to places of higher responsibility than those held by the third class.

31. *Training shop superintendents.*—It is very essential that men holding positions of responsibility should acquire a habit of making observations and keeping a record of them, and in this manner develop habits which will prove very valuable to them when asked to look after the work of several men or the material required for a gang or shop.

In order to systematize this work, a form is provided for the second and third classes of apprentices which each is required to fill in. This form contains all the data necessary to establish piece-work prices; the better class of apprentices are thus organized into an elementary rate fixing department, and information is secured from which can be obtained a very accurate estimate of the cost of labor or of any piece of work. The superintendent of apprentices also secures a very accurate estimate of the cost of labor on any piece of work. The superintendent of apprentices also secures a knowledge of the work being done by each apprentice and a means for comparing the work of the different apprentices. Says a well-known writer:

> The management carefully guards against any tendency towards paternalism, in an effort to bring out the individual

qualities of the apprentices and with the belief that the apprentices will develop into better and stronger men if they are compelled to rely upon their own resources. There are no special lectures and no clubs or social features; the blue overalls level all social distinctions; princes and sons of men of wealth work shoulder to shoulder with those less favored, and it is such an every-day experience as to call for no comment.

It will also be seen that the plan is not altogether a philanthropic one, for the incorporation of the several features mentioned before make the system self-supporting. The chief advantage, however, is the development of a loyal, brainy set of men with a thorough training in the mechanic arts and especially developed in certain lines. Those of them that remain will lend their energy to assisting and building up the business of their employers and are just as proud of the works and its accomplishments and just as jealous of its reputation as the proprietors themselves, for they consider themselves the children of the works. The manufacturing plant that has a loyal, intelligent body of workmen who make their employer's interest their own, has the very best equipment for meeting the strenuous competition of the present day. In order that a manufacturer may manufacture goods more cheaply than his competitor, he must have men in his employ of the best intellect, of the greatest industry and persistence, and loyal to him and to the business he represents.

32. *Importance of moral efficiency.*—Ambition, perseverance and honesty depend upon both heredity and environment, primarily upon the latter. The quality of honesty among workmen ought to be far more common than it is. The faithful workman among unskilled laborers is rare. The average unskilled laborer will steal time from his employer wherever possible. He takes no interest in doing his work well, and although he would not steal money or break into a house, in his business relations with his employer, to whom he is bound to give

faithful service, he is essentially dishonest. It has been found, however, that fidelity among workmen increases as their skill and intelligence increase, and their preliminary education has, therefore, a most important bearing upon the honesty with which they perform their work.

Ambition and perseverance, far more than honesty, depend upon environment. Where the constitution of society allows the workman but a small share of what he produces, so that the yield of his labor is only sufficient to provide the barest necessities, and where it is difficult for a man to rise into a higher station than that in which he was born, ambition has no chance to develop, and perseverance extends only to procuring the necessities of life. An illustration of this is furnished by the effect of residence in the United States upon certain classes of immigrants. The Italian and other peasantry, who are ground down at home by high taxes and military service, and whose wages, even without these deductions, are low enough, have no inducement to better their condition because they know that it is impossible. These people, however, in the United States where they are favored by just laws, are paid higher wages and are secured in the fruits of their labor, develop great energy and ambition. Many of them have accumulated large amounts of property and risen to positions of honor and influence.

CHAPTER VI

WOMAN AND CHILD LABOR

33. *The labor of women and children.*—The labor of women and children is economical only because it is cheap. This labor supplements the labor of men, and it is therefore valued at a lower rate. Female and child labor is mechanically less efficient but this is no bar to its employment since mechanical skill is of decreasing importance, owing to the increasing use of automatic machinery, which performs complicated operations with great accuracy and merely requires watching and tending. The labor of women and children is particularly important in the textile industries, where the use of automatic machines is so extensive.

According to the census of 1910 the number of persons under the age of sixteen employed in the manufacturing industries of the United States was 161,493 and in mining, 8,151. Probably several times the total for manufacturing and mining were employed in agricultural pursuits, in domestic and professional service, and in trade and transportation, but the figures have not been made available. There has been a great improvement in conditions since the census of 1900.

The child labor problem has assumed a particularly acute form in the South, where a large number of "poor whites" from the hills have gone down into the districts controlled by the newly erected cotton mills, and the whole family has gone into the mill, with the exception of the father who in some cases, carries the dinner pails

to the children and draws the pay for the family on Saturday night.

It is generally conceded that the effect of factory work on the average child under fourteen or fifteen years is bad. In the first place, we have come to believe that in order to be an efficient member of society, every person should receive at least a minimum amount of education. The child who stops school at an early age, goes into the factory and works for long hours at some monotonous task, not only does not learn, but actually forgets what little knowledge he was able to secure before going to work.

34. *Moral and physical effects of child labor.*—The effect of the moral atmsophere of the factory upon the average child is a question that has been vigorously discussed from both sides. There can be no denying the fact, however, that a child of tender years who is placed in contact with grown men and women of all kinds is in a position to learn much that would not be learned from either school companions, school teachers, or members of the family at home. The resulting effect upon the child's morals is likely to be bad.

The effect of factory work on the physical make-up of a growing child is apparent. The natural tendency of the child is to play. It is through play that children develop both mentally and physically. Play involves a change of occupation at the will of the person who is playing. In contrast with this activity, the essential thing about modern factory work is that it is monotonous, long continued, and continued at the will not of the worker, but of the boss or foreman. The child in the factory is given mechanical things to do because of his lack of skill and ability to do better things. For example, he may turn in the edges of a box cover, tie

a broken thread on a spinning frame, sort out pieces of iron to be made into bolts, or a thousand other mechanical operations which form a part of modern factory work. The child who is compelled to do one thing for a thousand or five thousand times a day, day after day, week after week, does not grow and develop either mentally or physically, but is stunted in both directions.

In short, it is fair to say that the child who is working is, as a rule, not developing intellectually, may be degraded morally, and is apt to be stunted physically. The maintenance of an efficient labor force in the community requires a development in each person of mental, moral and physical traits, and from the standpoint of society, we cannot afford to continue a system which, by working a child at an early age, renders him a less efficient producer for the rest of his life.

35. *Indirect effects of child labor.*—Aside from the effect of factory work, it is interesting to note that child labor means, for the time being, at least, a decrease in the amount of labor which may be had by adults. For example, in England before the factory system began, men of skill and ability were required to do the spinning and weaving. The moment an invention was perfected which enabled a machine to do most of the work, which merely required mechanical attention to see that the threads did not break, it became possible to dispense with the skilled man and employ an unskilled child. In other words, labor-saving machinery tended by children results in depriving adults of their places in this particular occupation. A well-known illustration is given of a shoemaker in Massachusetts who was working in a factory for $2 a day. A machine was invented and put in operation which did the work, and this man was dis-

missed and his son of fifteen employed at $1 a day to tend the machine.

The effect of child labor on family life, and therefore on the social structure, is, to say the least, detrimental. This is particularly true of girls from twelve to fourteen who go to work in factories, and from that time till they are married are employed in factory work from nine to eleven hours per day. They have no opportunity of learning home duties, and when the time comes for them to marry, they will be less efficient housewives and home makers than if they had secured, either at school or at home, some training that would prepare them for their lives as wives and mothers.

36. *Child labor inefficient and uneconomical.*—It is interesting to note that child labor is always more prevalent in new industries and in new communities which for the first time are developing industries. In old communities, manufacturers, as a rule, refuse to employ children under fourteen and often under sixteen, on the ground that a child under sixteen is so unintelligent, irresponsible, and reckless that it is apt to waste more than it makes. Such a child is so inefficient that a man at twice the salary can produce far more than twice the product. It is a well-known fact that goods manufactured in the South, where child labor is prevalent, because of their inferior quality, bring lower prices in the market than goods manufactured in the communities where there is not so much child labor employed. The community is very generally coming to believe that child labor is not only cheap labor so far as wages are concerned, but that it results in a cheap product—cheap both in price and in quality.

From a national standpoint, therefore, the employ-

ment of small children to do the work of the world is a mistake because it inevitably leads to a depreciation in the quality and character of the laboring force of the community; first, because it impairs the ability of the child; second, because of its effect upon the home and social life; third, because it affects adversely the wages of adult labor; fourth, because it results in a poorer product. From every standpoint, child labor is detrimental and should be strictly suppressed in the interest of the coming generations.

37. *Women in industry.*—In 1900 there were about 5,000,000 women working in gainful occupations in the United States. The census figures of 1910 report in manufacturing industries 1,290,389 female employes. About one-sixth of those gainfully employed are women and there is no important branch of industry in which they are not engaged.

The effects of the entrance of women into industry have been variously estimated, but the causes are obvious. In the first place, the development of modern industry has permitted a minute subdivision of labor which gives each person in an industry a very small and definite operation to perform. For example, a girl may paste corners on paper boxes, or watch a spinning frame to see that the threads do not break. These operations are largely mechanical, and require speed and dexterity rather than mechanical ingenuity. In the modern factory, a regular machinist is employed to see that the machines are in good condition and running properly, while the operating of each machine is done by one who knows nothing of its mechanism, but who has mastered the art of tending to the needs of that particular machine. The operator may sew one seam on a pair of overalls, or put buttons on a coat, or stamp out pieces

of paper to make Christmas cards, or do any one of a thousand things, each of which is simple, and to be learned in a short time. A girl of sixteen or eighteen can go to a factory, and in a few days learn to manage a machine without having any previous training or apprenticeship. To be sure, her efficiency will not be high during the first few months, but she can at least make a living at the work.

In the second place, this minute subdivision of labor permits of what is known as the standardization of industry. Each of these small operations becomes fixed or standardized. No experience is required to manage a certain machine; the work can be learned in a short time, and anybody with a small amount of training can carry on this part of a productive operation. It is not necessary to keep the same person at work on the same machine, for so long as the machine is kept going, production continues. That is, production depends not upon the individuality of the worker, but rather upon the continued operation of a standard machine.

38. *Women's wages lower than men's.*—The third reason for the entrance of women into industry is the possibility of their working considerably cheaper than men. A man in industry requires a wage sufficient to maintain himself and his family, whereas many women living at home, with little or nothing to do, are willing to go into industry in order to secure spending money or enough money to guarantee them the little necessities and luxuries of life that a young woman naturally desires. As a rule, these women are single, have no one dependent on them and in many cases can secure their living at home. Thus they are willing to work for fifty or seventy-five cents or a dollar a day, whereas a man cannot support a family and work in the same industry

for less than $2 a day. In consequence women are employed and men leave the industry. This is particularly true in such an industry as cigar-making, which requires dexterity rather than strength. Cigars which were formerly rolled by men for seventy-five cents or eighty cents a hundred are now rolled in some factories by girls for thirty-five or forty cents. Men are forced out of the industry because they canot afford to work at such low wages, whereas girls, ranging in age from sixteen up, are very willing to receive $3 or $4 a week for their efforts.

Had labor not been subdivided and industry standardized, women would have found it difficult to enter many industries; but with the development of machinery leaving to the worker only quick, mechanical movements to perform, women are often more desirable than men because of their greater dexterity and quickness.

39. *Women in factory industry.*—From the standpoint of industry, these are the prime causes leading women to take up industrial pursuits, but one of the chief things that has led young women staying at home to go into industry has been the fact that nearly all of the industries which were formerly carried on at home are now carried on in factories on a large scale. Spinning and weaving and the manufacture of clothing were the first things to leave the home. Although in some mountainous districts of the South clothing is still spun and made up at home, the great majority of people in the United States to-day wear factory-made cloth and clothing. A hundred years ago factory-made cloth and clothing were the exception and not the rule.

The changing of spinning and weaving from a home industry to a factory industry meant that all persons who were engaged in these industries must move into

towns, because only in towns could a factory system be carried on when the transportation was as defective as it was in the early part of the 19th century. This moving into towns meant that people would no longer be able to keep chickens and cows and the women of the household were therefore deprived of another occupation, namely, tending the chickens and cows and taking care of the milk and making butter.

Then the manufacture of underclothing and stockings was undertaken in factories with exactly the same result. People, instead of engaging in these occupations at home, bought the factory-made goods because they were cheap. At the same time, in order to buy factory-made articles, they moved to town to secure employment in the factories. Thus the making of clothing in factories instead of at home removed from the women of the household a great group of occupations which had formerly taken up a large part of their time.

Within the past twenty years, the preparation of food stuffs, another great group of consumption goods, has been relegated to the factory. Until recent years, bread was baked at home. Now one bread company located in a city, for example, Buffalo, sends bread to small towns two hundred miles away. Meat was formerly killed and dressed at home. It is now killed in the Middle West and delivered dressed to all parts of the world. Most households no longer make their own soap, but buy the product ready made. The same is true of canned fruit and vegetables. Successful factory processes have been devised by which they are prepared in factories and shipped far and wide to the consumer. Cakes, cookies and crackers and breakfast foods are also prepared in factories and shipped to all parts of the country "pre-digested" and ready to eat.

Thus of the three occupations, sewing, cooking and cleaning which women formerly performed at home, two, sewing and cooking, are carried on in the factories, while the cleaning still remains a problem. Much of this, however, has been shifted to the laundry and automatic carpet-cleaning companies, and within a generation woman will be deprived of practically every occupation which was formerly considered to be in her home sphere. Therefore, when a girl finishes her schooling there is no possibility for her to engage in any occupation at home, and she naturally follows the occupations which have left the home and gone to the factory.

A minute subdivision of labor and a standardization of industry have made it possible for women to enter industry; the wish to supplement the family income or the necessity for so doing, and the absence of home employments, due to the replacement of home industry by factory industry, have made the woman desirous of entering industry; and these two causes, working side by side with the possibility of woman's working cheaply and the superior ability of women to carry on standardized industry have led to the great rush of women into gainful occupations.

40. *The problem of women in industry—argument against.*—1. Woman is the home maker and she should perform that function and no other, as it is not possible for any one to do two things well at the same time.

2. Children can be brought up properly only when subject to the constant care of the mother, and this cannot be given if the mother is working a large part of her time in an occupation apart from the home.

3. Factory labor injures women much more than it injures men. Women are so constituted physically that

long standing or arduous work is apt to result seriously.

4. The work of women results in cutting down the wages of men.

5. The working of married women has a serious effect on the coming generation of children.

41. *Arguments in favor of women's labor.*—On the other hand, those in favor of women engaging in industry maintain that—

1. There is little left for a woman to do at home, and that as it is bad to be idle, it logically follows that she should go into the factory.

2. A woman working at home is working all the time, whereas if she engages in factory work her hours are definite and limited.

3. Women do not care for children all of the time even when they remain at home, because of the fact that the children are in school during a large part of the day.

4. With our standardized industry, the physiological differences between man and woman need play no part in the controversy, because the continuance of a given operation does not require the constant presence of one operator, but may be carried on one week by one person and the next week by another.

5. The entrance of women into industry makes them independent. Heretofore, women in poorer and larger families were compelled to get married in order to relieve their fathers of the burden of taking care of them. The results of such forced marriages were in many cases unhappiness and misery. Under the new system, women as independent wage earners can actually assist their father in taking care of the home, and need marry only when they find a congenial person.

6. The entrance of women into industry places women and men on an equality, whereas under the old

system, man alone earned a livelihood and women were constantly subjected to the disagreeable necessity of asking the men for money. The placing of women and men on an equality means democracy in its highest form, because in a democracy there are no superiors and no inferiors. This development of women will mean a higher standard of children—children of more character and independence.

7. It is not fair, when the work of the world is done so largely by machines, to require the women to do the drudgery. It is not necessary to banish her to the tub, the needle and the hot stove, while man engages in more interesting and enjoyable pursuits.

8. Women are needed in industry because they can there produce far more than they could at home. In modern standardized industry, women are often more skilled and therefore more productive than men, because the heavy work is all done by machinery and only dexterity and skill are required. Women often possess these qualities to a higher degree than men, and besides, women as a whole are steadier and more reliable workers. All modern inventions and improvements tend to place women on a level with men and give them the same advantages in the industrial world.

The controversy is not yet ended, and each person is at liberty to draw his own conclusions. Without questioning the validity of the arguments on either side, it is undoubtedly true that more women are going into industry every year because of the possibilities which modern industry presents to them to become effective earners, and because of the necessity of having some occupation. Unquestionably women are in industry to stay. The problem of society is so to mold industry that it may not injure the women who engage in it.

CHAPTER VII

CAPITAL

42. *Primitive man compared with civilized man.*— Nature and labor are the primary elements in production. All the wealth of the world has been produced by the coöperation of these two factors. We have, however, merely to look about us in order to discover that man unaided can make use of none of the abundant materials and mighty forces by which he is surrounded.

There is no more helpless object than a man turned adrift in a wilderness without tools or weapons and left to find his subsistence. He is unable to secure any vegetable food except nuts, wild fruits and berries. Animal food, even if he were strong enough to catch and kill it, he cannot eat uncooked, and he has no fire. He requires clothing to cover him, and clothing is not to be had. For shelter, he must dispute with the beasts for the caves and burrows in which he will, moreover, soon perish from cold or wet. In a word, man placed on a level with the beasts, left to work out his salvation with tooth and claw, is in a hopeless plight. In a state of nature, if such a state ever existed, his situation is indeed deplorable. The miserable condition of the lowest tribes of savages, such as the Bushmen of South Africa, or the natives of Australia, show how narrow is the remove from man in a state of nature and the beasts of the field.

From man as we have pictured him, to man as he is, is a great distance. The lord of creation, master of the

earth and the sea, with all things put under his feet; there is little resemblance between the two pictures. Civilized man draws upon every part of the earth for his subsistence. Upon his breakfast table appear the contributions of every clime. His clothing and housing enable him to live in comfort in a climate in which he would otherwise soon perish. Instead of spending his entire time and energies from early childhood in the struggle for the means of subsistence, one-fourth of his active life is usually unproductive, being spent under the care of his parents or at school, and much of the remainder is given to recreation. His whole existence is artificial. His food is prepared for him, and bears little or no resemblance to its original elements. His clothing transforms his appearance. He passes his life in a world of which his early ancestors knew nothing. By the telegraph and telephone he has annihilated space for purposes of communication and by the steamship and the railway he has reduced the world to one-tenth of its original size. It is necessary that we should fix this comparison carefully in our minds, for the great gulf which it presents between man in a state of nature and man as we find him in modern society, has been spanned by the use of capital.

43. *Capital defined.*—Capital may be defined as the sum of the machinery and materials of production. The goods which we are consuming and those which we expect to consume make up only a small part of the total mass of material wealth. This is quickly seen by a survey of the following table taken from a volume entitled "Wealth, Debt and Taxation," published by the United States Census Bureau. It gives what is doubtless the most accurate and careful estimate ever made of the total wealth of the United States. The

estimate is made for the year 1900 and the year 1904. In the former year the total value of all property in the United States is set at $88,500,000,000. In the latter year the total was $107,000,000,000. The census estimate of 1904 classes the total wealth of the United States as follows:

Real property and improvements	$62,340,000,000
Live stock	4,074,000,000
Farm implements and machinery	845,000,000
Manufacturing machinery, tools and implements	3,300,000,000
Gold and silver coin and bullion	2,000,000,000
Railroads and their equipment	11,245,000,000
Street railways, shipping, water works, electric light and power systems, telegraph and telephone systems and canals	4,841,000,000
All other property — products of agriculture, manufactures and mines, merchandise, clothing, furniture and miscellaneous personal property	18,462,000,000

No more than one-tenth of the property of the United States is represented by goods ready for consumption—"consumption goods" so called. The remainder is made up of "capital goods," goods used for purposes of further production. In this class are included, as we have just seen, the farms with all their equipment of buildings and machinery, the mines, quarries and oil wells, the thousands of factories filled with machinery of all sorts, the 246,000 miles of railway, and the thousands of steamships and sailing vessels, all the buildings in towns and cities which are used for productive purposes, the money by which exchanges are effected, and finally every kind of raw material from ore, logs and wool to pig iron, planed lumber and cloth.

44. *The service of capital in production.*—The service of capital in production is to enable men to utilize the forces and properties of nature, to make nature ac-

complish for them what they could not accomplish for themselves. To this end, they must, as it were, capture these forces and compel them to do their bidding.

A peasant requires drinking water. The spring is some distance from his house. There are various ways in which he may supply his daily wants. First, he may go to the spring each time he is thirsty, and drink out of his hollowed hand. This is the most direct way; satisfaction follows immediately on exertion. But it is an inconvenient way, for our peasant has to take his way to the spring as often as he is thirsty. And it is an insufficient way, for he can never collect and store any great quantity such as he requires for various other purposes. Second, he may take a log of wood, hollow it out into a kind of pail, and carry his day's supply from the spring to his cottage. The advantage is obvious, but it necessitates a roundabout way of considerable length. The man must spend perhaps, a day in cutting out the pail; before doing so he must have felled a tree in the forest; to do this again, he must have an axe, and so on. But there is still a third way, instead of felling one tree he fells a number of trees, splits and hollows them, lays them end for end, and so constructs a runnel or rhone which brings a full head of water to his cottage. Here, obviously, between the expenditure of the labor and the obtaining of the water, we have a very roundabout way, but, then the result is ever so much greater. Our peasant need no longer take his weary way from the house to the well with the heavy pail on his shoulder, and yet he has a constant and full supply of the freshest water at his very door.

Another example. I require stone for building a house. There is a rich vein of excellent sandstone in a neighboring hill. How is it to be got at? First, I may work the loose stone back and forth with my bare fingers and break off what can be broken off. This is the most direct, but also the least productive way. Second, I may take a piece of iron, make a hammer and chisel out of it, and use them on the hard stone—a roundabout way which, of course, leads to a very much better result than the

former. Third method—having a hammer and chisel I use them to drill a hole in the rock; next I turn my attention to producing charcoal, sulphur and nitre, by mixing them in a powder, then I pour the powder into the hole, and the explosion that follows splits the stone into convenient pieces—still more of a roundabout way, but one which, as experience shows, is as much superior to the second way in result as the second was to the first.[1]

These simple illustrations show the nature of the service which capital performs in industry. It places the forces of nature and the properties of matter at the service of man. In the example first given, the impenetrability of wood to water was utilized, and also the force of gravitation. The peasant by making his bucket and constructing his trough captured, as it were, this property and this force and compelled them to serve him. In the second illustration, the hardness of iron was utilized and also the explosive force of powder. These properties of matter became the servants of man. This condition of affairs is characteristic of all modern capitalistic production.

A steam engine is built to utilize the expansive force of steam for the purpose of transforming and transporting commodities. This power is transmitted by means of shafting, pulley wheels and belts to a machine tool, such as a planer. In this machine, the hardness of steel in the cutting tool is combined with the power of steam to shape and place cast iron as easily as a carpenter planes a soft pine board. Here then is another case of harnessing natural forces to do work which man could not do for himself.

45. *Capitalistic production is indirect.*—Capitalistic production is indirect or roundabout. Its efficiency in-

[1] Böhm-Bawerk, "Positive Theory of Capital," pp. 18–19.

creases with its indirection. A savage is hungry. He repairs to the shore and gathers shellfish. That is direct production. He satisfies his immediate wants. Another man, higher in the scale of intelligence, collects by hard labor enough fish to give him subsistence for some days. This time he employs in making a canoe and weaving a net. With these appliances, he is able with comparatively little effort, not merely to supply his own wants for food, but to obtain a large surplus of fish which he may exchange for skins or weapons which he desires. The first man employed the direct method of production, the second, the indirect. The first went to the shore and satisfied his hunger; the second engaged in a totally distinct set of operations, apparently disconnected with fish or fishing, with the result that he became a far better fisherman than his more simple-minded fellow.

The superiority of capitalistic over direct production and the reasons for it will appear clearly from a few illustrations. One of the most urgent needs of a pioneer in a new country is for fresh water. Having found a spring he may gratify this need by scooping up the water with his hands. This will be direct production. Or he may make a cup in which he can dip up, by stooping once, all of the water he can drink. Such a cup will be a capital good and the process will be capitalistic production. It will multiply largely the return resulting from the effort of stooping. Or he may fashion a larger vessel in addition to his cup with which he can dip up at one time all of the water he requires for a whole day. This will be more highly capitalistic production. Or, finally, if the spring happens to be at a higher level than his cabin, he may construct a trough of hollowed logs capable of conducting the water from its source to his very door. This will be much more highly capitalistic production than either of the other processes, and its return will be correspondingly larger. The force of gravity

will now relieve him entirely of the task of carrying the water, and all that he will need to do to secure an abundant supply will be to keep his trough in repair.[1]

46. *Illustrations of indirect methods in production—Fishing.*—To go a step further. Suppose a civilized man wishes to fish on a commercial scale. He has built for him a steam vessel, with an elaborate equipment of nets and seines. He lays in a store of provisions, enough to last a month or more. He provides facilities for curing, salting and packing the fish taken. He hires a crew. Then he is ready for fishing. The first operation requires an hour; the result is a few poor shellfish. The second requires perhaps two weeks, and the result is a boatload, perhaps 150 pounds, of the fish that can be taken close off shore. The third requires six months, besides a number of extended series of operations in constructing the machinery with the aid of which the vessel is built and equipped. The result is a hundred tons of deep sea fish. At each step, the productive process grows more indirect, more roundabout and circuitous, but at the same time more efficient.

47. *An illustration of capitalistic production—increase of flour trade to China.*—Consider finally an extreme illustration of the law whose operation we are here considering. Let us assume that the president of the Great Northern Railway desires to increase the sale of American flour in China. To this end, he has first to extend his lines into Manitoba to bring down to Minneapolis the wheat of the Red River Valley. He places a large order for rails with the Carnegie Steel Company of Pittsburgh, another order for locomotives with the Baldwin Locomotive Works of Philadelphia, and an order for box cars with the American Car and

[1] H. R. Seager, "Economics: Briefer Course," p. 79.

Foundry Company. He also orders built two steamships specially designed for this trade.

This succession of orders stimulates activity in the iron and steel trade. An enormous quantity of iron is wanted for these various purposes. The production of iron ore on the Mesaba Range is increased, new vessels are put into service to carry the ore to Conneaut, a port at the foot of Lake Erie, and new cars and locomotives are transferred to the Pittsburgh Bessemer and Lake Erie Railroad to take this ore to Pittsburgh. Similar activity is visible in the coke region. Work on a new blast furnace which the Carnegie Company is building is rushed to completion. The fresh supplies of material are quickly converted into iron; a part of this iron is turned into steel rails and shipped north, another part into billets, bars, plates and sheets and sold to the car, locomotive and shipbuilding works.

Meanwhile, as the rails are received in Manitoba, a force of men are laying the new line. By the time a hundred miles has been constructed, the equipment is ready and the service has been started. Meanwhile, also, the immigration agents of the Great Northern have been busy publishing the advantages of the new region to be opened. As a result of their efforts, a rush of population follows the railroad, and the settlement of the territory creates a demand for lumber, live stock, agricultural implements, furniture, and provisions, stimulating the activity of the industries which produce these commodities. Within a year, a large crop of wheat is harvested, carried to Minneapolis and ground into flour, which is then shipped to Seattle to be loaded into the new vessels which have by this time been completed. Finally, after two years of preparation, the flour which was the object of all this preparation is landed in China,

its destination from the beginning. This illustration shows the essential character of the capitalistic system of production as being roundabout and indirect. In order to produce fifty thousand tons of flour a long series of preliminary operations were necessary, most of which were indirectly related to flour production, but which all contributed in one way and another to this result. With the resources for wheat production existing before the extension of the railroad was inaugurated, the new demand for flour could not have been supplied. If the demand had been only for a few thousand barrels, no increase in equipment would have been needed. To fill a large order, however, the circuitous path which we have traced must be followed, in order to make a new draft upon the great reservoir of productive power in the northwest.

48. *Saving defined.*—We may define the process of the creation of capital as saving. As commonly understood, saving consists in putting away money in a bank. In fact, however, this deposit of money is only a means to the end of the production of capital goods. Ignoring, as we may, at this stage of our discussion, all consideration of the function of the savings institution in promoting the production of capital goods, we may point out that since the object of saving is to obtain an income, this project can be achieved only by increasing the production of consumable goods, which in turn, as we have seen, necessitates the production of capital goods. This production of capital goods conserves or saves energy in a form in which it becomes available for the future satisfaction of human wants. We repeat, therefore, that saving is the production of capital or intermediate goods.

49. *Illustration of saving.*—When a railroad increases

the number of its cars, locomotives or miles of track, it is saving in the sense in which we are here using the term. This often involves large amounts in a single year. The amount of saving thus done depends largely on the financial condition of the country. In years of prosperity, railroads will extend their lines and add new cars. In years of depression, these expenses are immediately curtailed. However, a railroad in a healthy condition in normal times makes steady additions from year to year to its physical equipment. This is well illustrated in the accompanying table which shows the increase made in the number of locomotives, cars and trackage of the Pennsylvania Railroad system during the period 1904–1907.

	1904	1910	1912
Number of locomotives	5,327	6,860	7,101
Number of passenger cars	5,181	5,831	6,697
Number of freight cars	210,970	263,039	267,594
Miles of tracks	21,157	24,416	25,494

50. *Necessity of saving.*—A large amount of saving is necessitated, not merely by the destruction of materials in production, but by the deterioration of industrial plants, the exhaustion of soils and the destruction of forests. The productive equipment of society is constantly wearing out, and this must be replaced if the output of consumable goods, the end and aim of all productive activity, is not to be diminished.

51. *Maintenance of plant saving.*—One of the most interesting forms of saving is that involved in the maintenance of capital. This too is well illustrated in the history of every railroad. Two of the most important expense accounts on the books of all railroads are: (1) Maintenance of way and structure. (2) Maintenance of equipment. The principle underlying maintenance is that the property should be in as good

pnysical condition at the end of the year as it was at the beginning. A machine or a factory building may have a definite term of usefulness. This fact is recognized in the depreciation account which the owner carries on his books. A railway, on the other hand, is practically a permanent property upon which it is not customary or practicable to compute depreciation. A railway track in all its parts, is non-removable. It is a permanent structure and as such must be maintained in the highest state of efficiency in order to be effective. This is such a paramount necessity, that any railway company which does not spend generous sums upon maintenance of the permanent roadway, and upon improvements thereof, will soon find the operation of the road unduly expensive and dangerous.

First, let us look at the roadway itself. From the very first day that operation begins there must be spent large sums for strengthening the roadbed. Heavy rains, melting snow and sliding banks necessitate large expenditures for additional culverts, for larger drains, for ditching and for stone retaining walls, while the expense of heavy rock ballasting appears to be almost without end. There is always something to be done in straightening out curves, reducing grades, filling in soft places, draining the right of way and ofttimes part of the surrounding country, all of which must be paid for out of the earnings.

Then the bridges and trestles, hastily built in construction days, require strengthening with additional timbers as well as new sills, caps, posts, and stringers for replacement of rotten or defective materials. Even if a wooden bridge is entirely rebuilt, the cost must be paid out of the earnings. In five years or less, the ties, especially those that lie low in ground, are found to be

rotten or cut with the chafing of the rails, and have to be replaced a few at a time. It is not long before the rails on the curves and gradients show wear and have to be renewed, the old rails being retired to service on side tracks. Switches, frogs, track fastenings, angle bars and all the rest, do not last long and must be gradually replaced. The cost of all these renewals and replacements must be paid for out of the current year's earnings and charged to "maintenance of permanent way."

52. *Illustrations of maintenance.*—The problem of the maintenance of capital in the industrial world affords as many complex phases as those just noted in the management of a railroad. Not only must the industrial plant be maintained in good condition, but it must, from time to time, be replaced. There is a limit to the economy of repairs. In time a new engine, a new boiler, becomes necessary. This gradual deterioration of the industrial plant we know as depreciation. The fact that business realizes this fact is seen in the depreciation accounts that they carry on their books. A man installs a new machine costing $10,000; he knows, from experience, that the average life of such a machine is ten years; he further knows that it would be bad business, not to say illogical, to carry the value of that machine on his books during the ten years at $10,000. Common sense tells him that at the end of five years it will have fallen considerably in value. He, therefore, writes off in his books 10 per cent of the value each year, so that at the tenth year when his machine is ready for the junk pile, he deducts his last 10 per cent. His books, under these conditions, have represented the true status of his business at any particular moment. Similarly business men write off from 2½ per cent to 5 per cent each year for the depreciation of their factory buildings, as the

average life of these buildings is from twenty to forty years. To estimate accurately the rate of depreciation on many forms of capital is a difficult task, often requiring the expert knowledge of an accountant. A good illustration is found in the case of a manufacturer who uses steam as the source of power.

While the life of a boiler very largely depends upon the care and treatment it gets, the opportunity for repairs that is possible, the hours it is called upon to work, and the load it has to carry, much also depends upon the class of water with which it is fed. In a paper on the subject of "Depreciation of Water Works Plants," Mr. John W. Alvord, consulting engineer, of Chicago, gives an interesting table showing the history of thirty-two horizontal tubular boilers used in water-pumping stations in Illinois, Iowa and Michigan. The active life of these thirty-two boilers was found to have varied from six years for two boilers at Sterling, Illinois, where artesian water was used, to twenty-three years for two boilers at Oskaloosa, Iowa, where river water was used, the latter boilers being still in service. The average life of this group of thirty-two boilers was fifteen years. This data would seem to indicate that the rate of depreciation charged on the diminishing value of the boilers should be 20 per cent where artesian water is used, 10 per cent where lake water is used, and 5 per cent where soft river water is used, other factors being equal. These rates may be subject to revision in view of the success with which boiler compounds are used; the duties the boilers are called upon to perform, and finally, whether they are running easy, with ample time for repairs and cleaning, or whether they are crowded beyond their proper capacity. In some plants there is ample room in the boiler house and abundant capacity is pro-

vided, the load is light, the rest hours plenty, and the opportunities for proper repairs are ample, while the care given is of the best; in such berths the boilers advance gracefully to old age and are often pensioned by being kept in reserve for emergencies or breakdowns. Here the life of active service is likely to be thirty years, or, in rare cases, even more. In other plants, where the conditions are reversed, where the exigencies of the business press sorely upon the boiler, necessitating the maximum horse power capacity all the time; where night work and Sunday work preclude the possibility of proper repairs being made, the life of a boiler of exactly the same make may be a third or even a quarter the time of where the conditions are all favorable.

The phenomenon of depreciation is universal in the business world. A man who would be successful dares not overlook it. To replace the loss incurred through depreciation, a large amount of saving is necessary.

53. *Meaning of the consumption of capital.*—All capital, although saved, is consumed in the processes of production. By the consumption of capital we mean that it is used up and destroyed. Everything which is produced is consumed, and in this way, even the most permanent forms of capital are destroyed. Furthermore, a large number of the materials of production are entirely destroyed in the processes of manufacture, so far as their original form is concerned. For example, coal under a factory boiler is burned up and destroyed. In addition to the consumption of capital there is the most familiar form in the consumption of finished goods, the consumption of food and clothing and other necessities by mankind. The destruction of these consumable goods we must classify as either productive or unproductive consumption.

54. *Productive and unproductive consumption.*— Productive consumption of consumable goods results in either maintaining or increasing the productive equipment of society. All consumption of commodities by the world's workers, i. e., by every man, woman and child who is employed in industry, is productive consumption.

All luxurious and extravagant consumption is unproductive consumption. Illustrations of unproductive consumption are furnished by the social dependents, defectives and delinquents, paupers, criminals and lunatics, whose support is a public burden. The expense of war is unproductive consumption. This last statement may be qualified. While the expense of war may be unproductive consumption, money spent on fortifications and navies should rather be looked upon as insurance. It is not strictly logical to class the purchase of champagne and similar luxuries with the buying of a man-of-war. Military and naval expenditure is rather payment of insurance than unproductive consumption. In the recent naval discussion in Great Britain the significant statement was made that the cost of four days of war would build one battle ship. In general, however, all consumption may be classed as unproductive which results in reducing the wealth or increasing the protective equipment of society.

The concrete forms which productive capital may assume are as follows:

1. Productive improvements upon land, such as fences, drains, fertilizers, etc. The land in itself is a gift of nature, not a product of human industry. It is not created by man to serve as an aid to indirect production. Productive improvements may be counted as capital so long as they can be distinguished from

the land itself. Fertilizers or drains become, in a shorter or longer time, indistinguishably merged with the land.

2. Buildings, such as factories or workshops, devoted to the purpose of aiding in the process of indirect production.

3. Means of transportation, such as roads, canals, and railways.

4. Raw materials, such as iron, wood, cotton, silk, and wool, which are consumed in the act of production, but reappear in the product.

5. Auxiliary materials, such as coal, lubricating oils, and bleaching materials, which aid the productive process, but do not reappear in the product.

6. Tools and machines. Within the last century these have become the most important form of capital, in many respects.

7. Domesticated animals used in production. Breeds of domestic animals have been so improved by scientific breeding that they are distinctly a product of human industry.

8. Money, weights and measures, and scales and balances. We shall soon see that these objects are a most important means of carrying on capitalistic or roundabout production.

9. Commercial stocks of finished products or consumers' goods. These do not include consumers' goods in the hands of the final consumers. Strictly speaking, finished products should not be called consumers' goods until they reach the final consumers. Capitalistic production would be impossible if capitalist-producers did not produce goods for distant markets and for a future season's consumption. Wheat must be produced in one season, and a sufficient stock must be carried over to last until the next harvest. Spring dress goods must be produced several months in advance of the season when they are demanded. Agricultural implements, made in America and exported to Australia, may be several months in reaching the final consumer. Merchants perform the important social function of carrying all such commercial stocks of goods as require weeks or months to pass from producer to consumer. Commercial or mercantile stocks of finished products are an indispensable aid to the process of capitalistic production, and fall under our definition of capi-

tal. They are really producers' and not consumers' goods. They are materials to which time and place utilities are being added by the merchants who forward them to consumers.

10. Capital used by persons who render personal services. The instruments of the surgeon, and the books and scientific apparatus of the student are examples. A fuller classification would include at least the following objects under this form of capital: (*a*) all scientific and professional instruments and apparatus; (*b*) churches, theaters, public halls, and all buildings necessary for rendering personal services; (*c*) courthouses, jails, forts, warships, government buildings, and all the appliances necessary for public functions. All these are means of producing indirectly services which could not be rendered directly without such appliances.[1]

James J. Hill, the great railroad builder, had in mind the relative scarcity of agricultural capital in the United States when he spoke as follows before the American Bankers' Association at Chicago in September, 1909:

The consumers of bread throughout the world increase by probably from four to five millions every year. In our own country we shall require from thirteen to fifteen million bushels more annually for seed and home consumption. The domestic supply cannot be maintained by present methods. Not only is the cultivation of the soil being neglected, but it is also notoriously ineffective.

All this has come about notwithstanding economic changes favorable to the occupation of the farm.

Practically only a few months lie between a universal cessation of production and the destruction of the human race by starvation. The marvelous diversity of modern industry and its products blind us to the bare simplicity of the situation. Those who, like you, are main factors in supplying to industry the means to carry it on, who open up the main and lateral channels through which the fertilizing stream of capital may be

[1] C. J. Bullock, "Introduction to the Study of Economics," pp. 133–5.

turned upon the otherwise barren field of labor, should be always mindful of the first great source and storehouse of national wealth, and the most sensitive whenever it is depleted or endangered.

55. *What constitutes economic usefulness.*—The corollary to this proposition is that the man of the greatest economic use in the world is the man who devotes the larger portion of his income to production, or who saves the larger part of his income. The spendthrift, the man who dissipates his patrimony and who wastes his substance in extravagance and luxury, although he may put a large amount of money into circulation, is, nevertheless, an enemy to society, because he is wasting its resources. The man who uses his income to build factories, railroads, to open mines, to clear and drain land, not only increases his own wealth, but also the wealth of society; while, on the other hand, the man who puts his income into fine houses and yachts, into the establishment and maintenance of large retinues of servants, and the purchase of enormously costly tapestries, rugs, rare books and pictures, all destined for his own enjoyment, is not only reducing his own wealth below the figure at which it would stand, but is also impairing the wealth of society. The man serves his fellowmen best, who most rapidly increases his wealth, in other words, by using it to produce capital goods in the multitude of which the wealth of society consists.

CHAPTER VIII

DIVISION OF LABOR

56. *The meaning of the division of labor.*—We have now to consider the method by which the three factors in production—natural agents, labor and capital—are combined in the productive process. Singly, no one of these factors is of any account in production; united, they can accomplish almost anything. This coöperation is accomplished by means of the division of labor. By the division of labor we mean the separation of the employments of natural agents, labor and capital, so that each producer has only a single thing to do, and so that each resource and each kind of machinery is utilized in a particular way.

We can best understand the division of labor, a broad term denoting the specialization of the employments of the three factors of production, by a description of the operations which go on in a typical manufacturing plant —a woolen mill.

57. *Illustration of the division of labor by the operations of a woolen mill.*—The operation of manufacturing woolen cloth is subdivided as follows: (1) Sorting the wool to separate the different grades which are used for different fabrics; (2) picking, which is performed by running the wool through a machine called a picker, which tears it apart, takes out burrs and other such matter which was not removed by washing, and separates the fibres in such a way that they are ready for the next operation; (3) scouring, to take all the grease and dirt

out of the wool and leaving it white; (4) dyeing, which is accomplished by boiling the wool in large vats filled with dye solution; (5) carding, the object of which is to further separate the fibres, to mix the colors, and to get the wool in a condition to be spun. It is accomplished by conveying the wool between cylinders covered with wire cloth which pulls the fibres apart, thoroughly mixes them, and lays them side by side. The next operation is (6) spinning, which is a combined process of drawing out and twisting. The object of spinning is to reduce the size of the strand and to make the wool ready for the loom. After the yarn is reduced to a proper size, it is ready for weaving. (7) Weaving consists in uniting the threads in such a way as to form a fabric. This is done by interlacing one set of threads called the warp with another set called the weft. The warp threads are drawn slowly through the loom in one way, and a shuttle, called a bobbin, containing the weft threads goes across and back in the opposite way. This interlaces the threads and forms the cloth. (8) The cloth is then taken to the finishing room, where it is soaped and run between rollers in order to shrink it; it is next run through a napper or gig, a cylinder studded with teazels which raises the nap on the face of the cloth. The long threads of this nap are next sheared, the cloth is then dried and run through a steam brush, examined a second time and run through an ironing machine. The final stage in finishing is to re-examine the cloth, measure, fold, weigh, wrap and ship it.

Here are eight different stages in the manufacture of woolen cloth, and each stage, as we have seen, is minutely subdivided into minor operations. Each operation, and in some large mills there are hundreds of separate processes going on at the same time, is in charge

of a foreman or boss who devotes his entire attention to the particular work over which he is placed. Under the bosses are workmen and laborers, each one exclusively occupied in doing some one particular thing. For example, before the yarn is ready to be woven, the warp threads must be wound upon a beam and the ends of the threads inserted in long needles which form what is known as the harness of the loom. In a large mill several men will be occupied in doing nothing all day long save inserting the warp threads in the eyes of the harness needle. Similar minute subdivisions of employment are met with in every department of this mill.

Adam Smith in his "Wealth of Nations" presents an illustration of the advantages of the division of labor which has become a classic:

To take an example, therefore, from a very trifling manufacture; but one in which the division of labor has been very often taken notice of, the trade of the pin-maker; a workman not educated to this business (which the division of labor has rendered a distinct trade), nor acquainted with the use of the machinery employed in it (to the invention of which the same division of labor has probably given occasion), could scarce, perhaps, with his utmost industry, make one pin a day, and certainly could not make twenty. But in the way in which this business is now carried on, not only the whole work is a peculiar trade, but it is divided into a number of branches, of which the greater part are likewise peculiar trades. One man draws out the wire, another straights it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head; to make head requires two or three distinct operations; to put it on is a peculiar business; to whiten the pins is another; it is even a trade by itself to put them into the paper; and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which, in some manufactories, are all performed by distinct hands, though in others the same

man will sometimes perform two or three of them. I have seen a small manufactory of this kind where ten men only were employed, and where some of them, consequently performed two or three distinct operations. But though they were very poor and therefore but indifferently accommodated with the necessary machinery, they could, when they exerted themselves, make among them about twelve pounds of pins a day. There are in a pound upwards of four thousand pins of middling size. These ten persons, therefore, could make among them upwards of forty-eight thousand pins a day. Each person, therefore, making a tenth part of forty-eight thousand pins, might be considered as making four thousand eight hundred pins a day. But if they had all wrought separately and independently, and without any of them having been educated to this peculiar business, they certainly could not each of them have made twenty, perhaps not one pin a day; that is, certainly, not the two hundred and fortieth, perhaps not the four thousand eight hundredth part of what they are at present capable of performing, in consequence of a proper division and combination of their different operations.

58. *Advantages of division of labor.*—This division of labor, which we have also defined as the specialization of employment, is the universal characteristic of modern industry. In some form it has been met with almost from the beginning. There have always been blacksmiths, carpenters, masons, stone-cutters, tailors and shoemakers. This division of trades is familiar to everyone. It has remained for modern production, however, to bring together a large number of these separate trades under one roof, and further to subdivide them until each man has only a small division of the entire process under his charge.

59. *Increased efficiency through the division of labor.*—The division of labor greatly increases the effectiveness of production. In the first place, it increases the

productive power of the individual. By constant repetition of a certain operation, such as inserting threads in harness needles, this operation, which is by no means easy to a beginner, becomes habitual or mechanical; an industrial habit is formed. The operative's movements are, therefore, greatly simplified. He makes no false motions; his hands work as accurately as though they were guided by machinery. Indeed, for all practical purposes, if fatigue could be eliminated from the calculation, he has become a machine, and works with the accuracy and certainty of power-driven mechanism. Finally, the specialization of employment diminishes the fatigue of the operative. Everyone knows from observation that the fatigue of performing an operation, which has been thoroughly learned, is much less than while the operator is learning to do this work. Having, by minute specialization and careful attention to performing a few operations, correctly learned how to do these things unconsciously, the fatigue of constant attention, which exhausts the beginner, is largely absent. A man can sit down at his loom or at his bench for five hours at a time without feeling especially wearied at the end of the day.

Adam Smith elaborates this point as follows, in the chapter already referred to:

> The great increase in the quantity of work, which, in consequence of the division of labor, the same number of people are capable of performing, is owing to three different circumstances; first, to the increase of dexterity in every particular workman; secondly, to the saving of time which is commonly lost in passing from one species of work to another; and, lastly, to the invention of a great number of machines which facilitate and abridge labor, and enable one man to do the work of many.

First, the improvement of the dexterity of the workman necessarily increases the quantity of work he can perform; and the division of labor, by reducing every man's labor to some one simple operation, and by making this operation the sole employment of his life, necessarily increases very much the dexterity of the workman. A common smith, who, though accustomed to handle the hammer, has never been used to make nails, if upon some particular occasion he is obliged to attempt it, will scarce, I am sure, be able to make above two or three hundred nails in a day, and those, too, very bad ones. A smith, who has been accustomed to make nails, but whose sole or principle business has not been that of a nailer, can seldom with his utmost diligence make more than eight hundred or a thousand nails a day. I have seen several boys under twenty years of age who had never exercised any other trade but that of making nails, and who, when they exerted themselves, could make, each of them, upwards of two thousand three hundred nails a day. The making of a nail, however, is by no means one of the simplest operations. The same person blows the bellows, stirs or mends the fire as there is occasion, heats the iron, and forges every part of the nail. In forging the head, too, he is obliged to change his tools. The different operations into which the making of a pin, or of a metal button, is subdivided, are all of them much more simple, and the dexterity of the person, of whose life it has been the sole business to perform them, is usually much greater. The rapidity with which some of the operations of those manufactures are performed, exceeds what the human hand could, by those who had never seen them, be supposed capable of acquiring.

Secondly, the advantage which is gained by saving the time commonly lost in passing from one sort of work to another, is much greater than we should at first view be apt to imagine it. It is impossible to pass very quickly from one kind of work to another, that is carried on in a different place, and with quite different tools. A country weaver, who cultivates a small farm, must lose a good deal of time in passing from his loom to the field, and from the field to his loom. When the two trades

can be carried on in the same workroom, the loss of time is no doubt much less. It is, even in this case, however, very considerable. A man commonly saunters a little in turning his hand from one sort of employment to another. When he first begins the new work he is seldom very keen and hearty; his mind, as they say, does not go to it, and for some time he rather trifles than applies to good purpose. The habit of sauntering and of indolent and careless application, which is naturally, or rather necessarily acquired by the workman who is obliged to change his work and his tools every half hour, and to apply his hand in twenty different ways almost every day of his life; renders him almost always slothful and lazy, and incapable of any vigorous action and application even on the most pressing occasions. Independent, therefore, of his deficiency in point of dexterity, this cause alone must always reduce considerably the quantity of work which he is capable of performing.

Thirdly, and lastly, everybody must be sensible how much labor is facilitated and abridged by the application of proper machinery. It is unnecessary to give any example. I shall only observe, therefore, that the invention of all those machines by which labor is so much facilitated and abridged, seems to have been originally owing to the division of labor. Men are much more likely to discover easier and readier methods of attaining any object, when the whole attention of their minds is directed towards that single object, than when it is dissipated among a great variety of things. But in consequence of the division of labor, the whole of every man's attention comes naturally to be directed towards some very simple object. It is naturally to be expected, therefore, that some one or other of those who are employed in each particular branch of labor should soon find out easier and readier methods of performing their own particular work, wherever the nature of it admits of such improvement. A great part of the machines made use of in those manufactures where labor is most subdivided, were originally the inventions of common workmen, who being each of them employed in some very simple operation, naturally

turned their thoughts towards finding out easier and readier methods of performing it. Whosoever has been much accustomed to visit such manufactures, must frequently have been shown very pretty machines, which were the inventions of such workmen, in order to facilitate and quicken their own particular part of the work. In the first fire-engines, a boy was constantly employed in opening and shutting alternately the communication between the boiler and the cylinder, according as the piston either ascended or descended. One of those boys, who loved to play with his companions, observed that, by tying a string from the handle of the valve which opened this communication to another part of the machine, the valve would open and shut without his assistance, and leave him at liberty to divert himself with his play-fellows. One of the greatest improvements which has been made on this machine since it was first invented, was in this manner the discovery of a boy who wanted to save his own labor.

60. *Increased specialization.*—The complexity of the specialization of employment, it should be remarked in passing, is constantly increasing as industry becomes more intricate and more difficult of comprehension. The acquisition of proficiency in most trades has always required a long period of apprenticeship, but for a man who wishes to reach the top in any trade or profession to-day, this period of preparation is greatly extended. Take, for example, the profession of medicine. Fifty years ago a young man spent two or three years in a physician's office, obtained a certificate of good character, went before the state examining board, if this institution existed—and it was not always found—and obtained a license to practice medicine. To-day, in many states, the prospective physician must first take a thorough high school course, follow this with four years of severe work in a medical college, and, finally, pass a supplementary examination set by

the state board. It is even proposed by some influential physicians to require several years' experience in a hospital, under supervision, before the student is permitted to practice. In mechanical pursuits, moreover, the equipment of industrial plants has now become so costly and intricate, and the importance of mere muscular activity has been so greatly diminished, that men cannot be trusted in positions of responsibility unless they have mastered the details of their employment by a long and arduous study, supplemented by experience. In many instances, intricate and costly processes are performed entirely by machinery, without any labor being directly utilized. In such industries, a high degree of technical skill is required in the operatives who direct these processes and handle machinery. The best illustration of this general statement is furnished by the steel industry. The following description of the machinery employed in open-hearth steel making, shows the extent to which labor has been superseded by mechanical appliance.

An open-hearth, or Siemens-Martin, furnace in its many forms has much the outward appearance of a gigantic baker's oven well strapped with iron buckstaves. There is an iron door, and through this when opened may be seen, on the hollowed refractory floor of the furnace, a pool of bubbling molten metal of 40 or 50 tons, brought to so intense a heat that the eye can no more look at it than on the noonday sun. The particular row of furnaces I have in mind is one of the sets of the Homestead Works. There are 20 altogether, and they were commenced about two years ago, when ten 47-ton furnaces (actual) were erected. After only one year had elapsed ten more furnaces were built of rather larger capacity, working 50-ton charges. At the time of my visit four more of the larger size were in progress, making 24 in all; but further ones were shortly

to be added. This instance of rapid progress by no means stands alone; it is typical.

The materials used for producing the mild steel—pig iron, scrap, and ore—are taken from the railway wagons by electric traveling cranes, and placed in iron charging boxes or troughs which are carried on small trucks. These boxes form part of a very ingenious machine which constitutes a leading feature in a good many steel plants of America. This is known as the Wellman-Seaver charging machine. It is one of the most important of the labor-saving appliances used in the United States steel works. The charging platform of a battery of open-hearth furnaces has rails laid on it running parallel with the row of furnaces. Upon these the charging machine is traversed on its wheels so as to command each furnace door in turn. The machine consists essentially of a strong platform and framework, upon which are the charging mechanism and the electrical motors that perform all the operations. The machine is traversed on its rails until it is opposite to the charging door of the furnace, the charging box on its bogie being between the furnace and the machine. The operator, seated on the machine, simply by turning an electrical switch causes a strong steel arm or charging-bar to be thrust forward. This grasps the charging box, pushes it bodily through the open door into the glowing furnace, and, turning it over, spills the contents into the pool of seething metal—or bath, as it is technically called. As the furnace doors are opened by hydraulic means, and as the bogies carrying the charging boxes are also moved by the machine, no labor is needed beyond that of the attendant who puts the mechanism into action. A charge of half a ton is placed in the furnace with almost incredible smoothness and swiftness, a few seconds being quite sufficient for the purpose.

This is the new way of charging an open-hearth furnace. The old way (which is largely the present way) is exactly that which would have been followed by Adam, or by Tubal Cain, if he had had a furnace to charge. The Wellman-Seaver machine is an advance at a stride. It carries us from the most primitive form of labor to that of a wonderfully organized

apparatus, actuated by the subtle power of which we now hear so much and have learnt so little, but which we know is destined to relieve humanity of a great part of the drudgery of civilization. By machinery of this kind men are set free to exercise those higher gifts which are the common heritage of all, but which are too often submerged by continuous labor of an arduous nature carried out under distressing conditions.[1]

In every trade and profession the need of specialized training is on the increase. The complexity of modern life makes this inevitable. This specialization has the great advantage of increasing the efficiency of the worker. This is clearly seen in the profession of medicine where we now have physicians for nearly every organ of the body. We have men who specialize on the treatment of the ear, the eye, the throat, on lung diseases, on diseases of the heart and stomach. We have lawyers who practice nothing but patent law or criminal law or real estate law. The all-round engineer has passed away, and we now have the civil engineer, the mechanical engineer, the electrical engineer and the chemical engineer. Even in the machine shop, specialization has entered and the day of the all-round machinist, the man who could operate almost any tool, is nearly ended.

61. *Illustration from the meat-packing industry.*— The packing industry, already referred to, furnishes abundant illustration of the extent to which extreme specialization has been carried. For example, three men are employed in getting the brains out of a steer's skull. One man has been a member of this gang for twenty years; he is, for all practical purposes, a machine, and he repeats his part of the work thousands of times without perceptible variation.

[1] "American Engineering Competition," p. 45.

It would be difficult to find another industry where division of labor has been so ingeniously and microscopically worked out. The animal has been surveyed and laid off like a map; and the men have been classified in over thirty specialties and twenty rates of pay, from sixteen cents to fifty cents an hour. The fifty-cent man is restricted to using the knife on the most delicate parts of the hide (floorman), or to using the ax in splitting the backbone (splitter), and wherever a less skilled man can be slipped in at eighteen, eighteen and a half, twenty, twenty-one, twenty-two and a half, twenty-four, twenty-five cents, and so on, a place is made for him and an occupation mapped out. In working on the hide alone there are nine positions at eight different rates of pay. A twenty-cent man pulls off the tail, a twenty-two-and-a-half-cent man pounds off another part where the hide separates readily, and the knife of the forty-cent man cuts a different texture and has a different "feel" from that of the fifty-cent man. Skill has become specialized to fit the anatomy.

In this way, in a gang of 230 men killing 105 cattle an hour, there are but 11 men paid 50 cents an hour, 3 men paid 45 cents, while the number getting 20 cents and over is 86 and the number getting under 20 cents is 144.[1]

62. *Economics effected by division of labor.*—Three objects are gained by this division of labor. First, cheaper men—unskilled and immigrant labor—can be utilized in large numbers. Second, skilled men become more highly expert in the quality of their work. While, on the one hand, this greatly increases the proportion of low-wage men, it also pushes up the wages of the very few skilled men on the delicate and particular parts of the work. An all-round butcher might expect to earn 35 cents an hour, but the highly specialized floorman or splitter earns 50 cents an hour. Some of these expert floormen work a week at a time

[1] Common's "Trade Unionism."

without cutting a single hide, so deft and delicate becomes their handling of the knife. If the company makes a few of these particular jobs desirable to the men and attaches them to its service, it can become independent of the hundreds who work at the jobs where they can do but little damage; and their low wage brings down the average to 21 cents where, if all were all-round butchers, the average would be 35 cents. Consequently, in the course of time, the companies put a few of the strongest men and those with a particular knack for their work on "steady time," paying them a salary of $24 to $27 a week, regardless of the time actually worked; but the other nine-tenths of the gang are hired by the hour and paid for the time at work. These steady-time men not only stand by the company, but act as pace setters; and in this way a third object of division of labor is brought about, namely, speed.

This minute division of labor grew with the slaughtering industry, following the introduction of the refrigerator car and the marketing of dressed beef in the decade of the seventies. Before the market was widened by these revolutionizing inventions, the killing gangs were small, since only the local demands were supplied. But when the number of cattle to be killed each day, increased to a thousand or more, an increasing gang or crew of men was put together; and the best men were kept at the most exacting work. At what point the greatest economy is reached was discovered by experiment and by comparison of one house with another. Taking a crew of 230 butchers, helpers, and laborers handling 1,050 cattle a day under the union regulations of output, the time required for each bullock from the pen to the cooler, the hide cellar, and all the other departments, to which the animal is distributed,

is equivalent to 131 minutes for one man. But this is made up of 6.4 minutes for the 50 cent man, 1¼ minutes for the 45 cent man, and so on; and the average wage per hour for the gang men would not exceed 21 cents, making the entire labor cost about 46 cents per bullock.

63. *Narrowing effect of specialization and its remedy.*—By some, this narrow specialization of activity is deplored. It is claimed that men who do only one thing are less useful citizens and are of less use to themselves than men with broad interests. It is claimed, moreover, that when a man is turned into a machine, his power of initiative and ambition are destroyed, and he falls into a groove from which he is not anxious to escape. The answer to this argument is that the broad training may be secured in advance of entering upon the employment in manual training schools or technical institutions of various kinds, and that even if a man is occupied in performing only a few operations, he still has ample leisure to keep up with the progress of his profession by reading and studying.

It is further pointed out, and this is an argument of much weight, that invention and improvement are enormously furthered by the subdivision of employment. When a man gives his entire attention to one small machine, or one mechanical operation, he comes in time to so thoroughly understand this that he is frequently able to suggest changes which will lighten his labor and increase the speed and effectiveness of the operation. In all large works, inventions are constantly being made by employés, whose attention has been called to the opportunity of improvement by the concentration of their attention within a narrow field.

64. *Division of labor and specialization of plant.*— This minute subdivision of industry has extended, not merely to individual employment, but to organizations of individual employment. In every industry factories are becoming more and more specialized in the production of one thing. No matter what the industry may be, cotton, woolen, leather, glass or copper manufacture, the tendency to specialize in the production of one thing is on the increase. The reason is as follows: Specialization means that the entire energies of the mill-force are concentrated on the production of one thing, which enables that thing to be produced at lower cost than if a number of articles are produced under the same roof. A factory, just as a man, can do a few things much more efficiently than many things. "Jack of all trades and master of none" is as true of large enterprises as of individuals. For the same reason specialized industry finds a readier sale for its products. A mill becomes known in a certain line because it turns out only one thing; and when a particular article is wanted, the name of that mill at once rises in the buyer's mind.

A minor advantage of specialized industry, which is often, however, of great importance, is that the surplus stock of such a plant, consisting, as it does, of only one kind of goods, is much more available for quick deliveries and to satisfy sudden and urgent demands, than when the stock includes a number of articles, in which case, any extra demand will soon exhaust it, and compel the company to decline orders, and thus lose custom.

65. *Illustrations of economics of specialization.*— The following illustrations of the effect of specialization in decreasing costs are taken from a lecture deliv-

ered in 1906 by Mr. Alexander E. Outerbridge, Jr., of Philadelphia, one of the leading engineers in the United States.

Specialization, in manufacturing, means that the manufacturer selects some article for which there is a big demand and devotes his time to it, so as to reduce the cost and be in partial control of the trade. I will give a few illustrations from experience and observation:

Where the same machinery and appliances are used, but the quantity is increased: In making two particular parts of a machine, the actual cost (these are figures taken from the cost books) was $20.19. They rarely make one. The same article in lots of twelve cost $6.12. If I had said in making five hundred, you might have been prepared to look for such a reduction, but when I said there is a reduction from two to twelve of 69 per cent, what does it mean? The reason is that in putting one piece of metal on a machine for the purpose of drilling or milling it, there is a great deal more time required in setting the piece on the machine than there is required to do the work, and if you have a large number of pieces and the same setting up of the machine will answer for the whole work, the cost of setting up is divided up among what you do, and consequently the price is decreased.

Another illustration is furnished by a small piece of machine work, a brass portion of a machine not much larger than a lead pencil. It has to be turned inside and outside, very true in measurement, threads cut upon it and they have to be just right. The actual cost of doing one piece is 25 cents, the cost of two is 15 cents, the cost of five 10 cents each, the cost of ten 5½ cents each, while the cost of 500 is 2 cents a piece.

66. *To show the difference in cost where different machinery and different processes are used.*—The first illustration was where the same machine and the same process were used, the only difference being the num-

ber. Now we come to the second illustration, where we show differences in cost when different machines and different processes are used.

For making one hundred $\frac{3}{4}''$x4″ bolts on a modern lathe, by reducing the body of a bolt from a bar of steel, the cost is $15.84. These are bolts which have a hexagonal head and have a thread to turn upon. The bar of steel from which such bolts are made is a hexagonal bar, of about 20 to 30 feet in length, and the modern "turret" lathe is an instrument so constructed that it takes the end of this bar, cutting it to the proper size required, the bolt passing from one arm of the "turret" lathe to another until it is completed, when it drops into a box.

When the "turret" lathe machine was brought into the market it was such a great advancement over the ordinary lathe that the concern with which I am connected, although it is a maker of lathes, felt that it was to their advantage to pay $1,000 a piece for these new lathes to make such bolts, because they could make them for $15.84 a hundred, whereas by their own lathes it cost $35. That was considered a great reduction and our pride had to be swallowed. The "turret" lathe is a machine upon which there are revolving turrets and there are a dozen different cutting tools arranged in the arms of the turrets, each tool performing its function. One tool cuts the bar into proper lengths, one will cut the thread, another put the finishing touches, and when the bolt is complete it falls into a box.

This concern was making these bolts to great satisfaction, when one day a man stepped into the office and said he would be pleased to have us look at a new bolt, which he could furnish us for $5.88 a hundred. We examined the bolt and found that it was better than we were making ourselves. Our bolts were made out of hexagonal bars and there was a great deal of waste in scrap. Now this man had found that he can take, instead of a hexagonal bar the size of the head of the bolt, a round bar the size of the thread and to that he will weld a head. The

head can be made of any metal desired. These bolts made by welding the heads to the body of the bolt are sold for $5.88 a hundred.

67. *Illustration from the manufacture of incandescent burners.*—When Edison first made his incandescent lamp the cost was $3. Now there are many similar lamps sold for less than twenty cents. In 1881, when this system of electric lighting was first brought to light by Mr. Edison, he sent an invitation to the various institutions in the country to have a representative come and see the lighting of Menlo Park, New Jersey, and I was selected as representative of the Franklin Institute. I went there during the day so as to see the lamp in daylight, and Mr. Edison took me over the works and showed me the process of making the lamps. I asked him how much it cost to make them. He replied $3 at first and now $1.50. I said that it appeared to me that that price is prohibitive. "Well," he said, "young man, I told you that when I began to make these it cost me $3. It now costs $1.50. Some day I expect to make them for 25 cents." Twenty-five years later I had occasion to go to a board meeting of a company of which Mr. Edison was president. I took my seat at the table and when my name was called, Mr. Edison recognized me. After the meeting he came and spoke to me. He said, "The last time I saw you I told you the lamps were costing me $1.50 and I expected to make them for 25 cents. You can buy all you want for 19 cents."

68. *Second result—continuous processes.*—The second advantage which arises from the division of labor is that it enables the combination of a large number of operations into a continuous process. Consider, for example, the operation of manufacturing woolen cloth already described. This includes a large number of separate processes, extending from the time the wool is delivered at the factory, until the time the cloth is delivered to the railroad for shipment. Each one of these operations, in consequence of the division of labor,

is going on simultaneously. At every minute of the working day, wool is being received, sorted, cleaned, graded, spun, woven, finished, packed and shipped. While the mill is running, it may almost be said that a stream of the raw materials is running into the store room, and a stream of the finished product is running out of the shipping room. This can be said of every factory in the land. The productive operation is everywhere continuous; it is not a series of disjointed stages, but a continuous flow, a steady transformation of raw material through various stages into the finished products.

It is obvious that this continuity of production would be impossible without the division of employment. If the men who received the wool were obliged to stop after a few moments and sort what they had received; if they were obliged to go to the next department and clean and scour the wool, and then to carry the same lot of wool on through the operation of spinning and weaving and finishing, is it not evident that the productive power of each one of them would be enormously curtailed? It would be, in fact, the barest fraction of what it is under the present system. On the other hand, by giving each man one thing to do, by placing in his hands the care of one of a large number of continuous stages in a productive process, all these operations can be performed simultaneously; every man can give his entire strength to doing that thing which he has learned to do best, and the various operations can be made to so supplement each other as to result in a production hundreds of times larger than could be achieved by one man working by himself.

CHAPTER IX

LOCATION OF INDUSTRIES

69. *Location of extractive industries.*—An important aspect of the division of labor relates to the specialization of localities in conducting those industries to which they are best suited. Just as the individual confines himself to one occupation in which his efforts are most effective, so the city or the locality devotes itself to specialized pursuits. As a result of this localization of industry, the production of wealth is greatly increased. The causes determining the localization of industry are as follows: In the first place, all the operations connected with the extractive industries—mining, agriculture, lumbering—are necessarily carried on where the natural resources are located. Generally speaking, the subsequent operations which reduce the bulk and increase the value of these raw materials are carried on at the source of supply, whenever the decrease in weight more than offsets the higher freight charges that result from the increased value given to the raw material by the manufacturing process. The lumber industry is the most common example. Logs are seldom carried far to the sawmill. The gain in value from the log to the plank is not so great as to call for a freight rate much higher than that charged on the log; while the loss in weight, from the first sawing, is so considerable as to make the expense of shipping rough boards much less than the cost of shipping logs. When we come to the subsequent

operations of wood working, however, in which the rough boards are planed and grooved and made into furniture and other articles, then we find that, other things being the same, the boards are shipped the long distances and the furniture and woodwork are manufactured as near as possible to the market where they are to be sold. This illustration shows the influence, upon the location of the industry, of the principle regulating freight rates, viz., that of charging a higher rate as the goods become more valuable, only here it is the shipper who is concerned to make his freight bill as low as he can by shipping his raw materials at a low rate and selling his finished product, which must pay a high rate, near the factory.

70. *The influence of climate upon the location of industry.*—Climate has often a decisive influence upon the location of industry. For example, in all forms of spinning and weaving, the fibres of silk, wool or cotton can be manipulated much more readily and held together more tenaciously in a moist atmosphere. So important is this influence of climate that in many New England mills, during dry weather, artificial means are used to keep the atmosphere of the mill humid. In the manufacture of cigarettes, on the other hand, a dry climate is considered necessary in order to preserve the flavor of the tobacco, which is impaired in damp air. Again, industries that are dependent upon the application of external heat, as for example, all forms of the iron and steel industry, try to avoid locating in a hot climate. For example, the iron and steel industry of Alabama is greatly handicapped because it must rely upon negro labor. The climate is too hot for white men to endure the additional heat of the iron or steel mill.

71. *Perishability of materials an important influence on location.*—The perishability of the materials has often an important influence on the location of the industry. For example, the juice of the sugar cane, if allowed to stand for a few hours, sours and spoils, and the sugar is lost. For this reason, and also because the canes must be crushed soon after they are cut, the sugar house must be located near the cane field. The canning of salmon, must, for the same reason, be carried on near the source of supply. The manufacture of butter and cheese illustrates the same principle.

72. *Supply of fuel or water power an important bearing on location.*—The supply of fuel or of water power has an important bearing on the location of industry. Water power is much cheaper than steam power and, for this reason, power industries centre about it. The supply of coal, however, is practically unlimited, while the supply of water power is quickly taken up, and coal can be carried long distances at comparatively small cost. For these reasons, whenever an increasing demand greatly raises the rental or price of water power, industries tend to leave the water-falls and move toward the coal mines. Other things being equal, industries will always seek the location of the cheapest power. It is for these reasons that most of the cotton mills built in the United States in recent years have been erected in the South where the numerous rivers of that section fall from the highlands into the costal plain. The development of electric power transmission for long distances has widened the circle of location of industries depending on electric power, and has given promise that, by its further development, water power of mountain and upland regions which is now unavailable because of its location may some day be used. In

this connection it should be noted that in the vast majority of cases materials are moved down hill and the lighter products are taken back up the grade. Very few upland regions can be the seats of great industrial centres.

73. *Industries utilizing waste products.*—Many industries are calculated to utilize either the waste products or the surplus labor of other industries, and are, therefore, located close to them. Thus in Armour's packing plant there are fifty-two separate departments. The hoofs of the animals are made into glue, the largest glue factory in the world being located here. A large soap factory to utilize a portion of the oils and fats; a curled hair factory; a factory for the manufacture of brush handles, paper cutters and other bone articles; a factory for the manufacture of articles of horn, such as combs, buttons, etc.; a fertilizer factory which works up bones, offal and blood, and many other departments are included in this one business. An example of an industry so located as to utilize surplus labor is furnished by the presence of the silk industry in the iron towns of eastern Pennsylvania. The women and girls who would otherwise be unemployed find work in the silk mills.

74. *Residence of consumer decisive factor in location of some industries.*—The residence of the consumer is the decisive factor in the location of many industries. These are the so-called service-industries, such as shoe mending, barbering, etc., and all those industries that produce goods for the personal and individual inspection of the consumer—such as tailoring, millinery, dressmaking, photographing and newspapers. All industries, finally, which can be carried on as well in one place as in another, and in the value of whose products trans-

portation cost does not figure largely, as a rule, seek the consumer.

75. *Specialization of labor a determining factor.*— Specialization of labor is often a determining factor in locating an industry. A population, such as that of southern New England, for example, may have been trained for generations in particular occupations until it comes to acquire, often it would seem by inheritance, remarkable dexterity in them. Knife and saw making, all kinds of brass work and other industries requiring a high order of skill, are chiefly carried on in Connecticut, for the reasons that here is the largest supply of highly skilled labor. This factor, however, is decreasing in importance with the increasing tendency of the people to move freely about the country and with the general spread of manual training and technical education.

76. *Cheapness of labor a decisive influence.*—The cheapness of labor may be a decisive influence in the location of industries. This is most important in those industries which are still in a backward condition, that is to say, in which machinery has not seriously entered, and where, therefore, the cost of labor is of great importance. Such industries are the manufacture of clothing, linen, underwear, gloves, millinery and cigars. The most familiar of these in reference to the importance of cheap labor, is the manufacture of clothing. This is carried on principally in the large cities, where it is given out by contract to men who hire the lowest grade of labor, usually foreigners, who are used to long hours and low wages at home, and who work often sixteen hours a day for thirty to fifty cents. This is called the "sweating system," and since it is justly considered to be highly injurious to public welfare, many laws have been directed against it, and some attempts have been made

to enforce these laws. These efforts have, as yet, been only partly successful.

77. *Changes in the location of industry.*—As a general principle, industry may be said to arrange itself about definite centres where markets are largest and where the raw materials can be most easily assembled. The tendency is to scatter these centers over the country whenever a particular district has grown populous enough to afford a good market. The main reason is that which was explained at the beginning of this section—the lower freight charges on the raw material as compared with the finished product, which always makes it an object to a manufacturer to get as close as possible to his market. Only in those cases—to repeat a former statement—where the gain in the smaller weight of the product is more than sufficient to counterbalance the higher cost of transporting manufactured products does industry in its location cling to the raw material; and these industries are generally those in which the increased value resulting from the manufacturing operation is not great. A further influence working for the diffusion of industry in scattered groups over a wide area, is the general distribution of raw material. Timber, iron, coal, copper, lead, clay, petroleum, stone, etc. are found in many places. Even those materials which are produced in one portion of the country are generally equidistant from many other portions, in some of which manufacturing cities are found, and some not. Take cotton, for example. The cotton fields of Arkansas are nearer to Kansas City than the cotton fields of North Carolina are to Fall River, Massachusetts, and yet, even to-day cotton goods are carried from Fall River and sold in Kansas City. This condition can only be temporary, and in the same way that we have seen the shoe industry

grow up in the middle west, so, in the progress of our industrial development, will all the important branches of manufacture tend to follow the currents of population, finally locating where the markets are largest.

78. *Pittsburgh as an illustration.*—A striking example of the reasons for an industrial location, which will serve to conclude this section, is furnished by Pittsburgh. This city is the centre and chief seat of the iron and steel trade of the United States. Nearly half the steel purchased in this country is made in Pittsburgh. In and around the city are more than 4,000 establishments engaged in the manufacture of iron and steel, and yet Pittsburgh has no workable iron beds nearer than 1,000 miles. It is from the iron mines of Lake Superior, owing to the purity and abundance of the ore which they produce, that substantially all the iron ore used in the Pittsburgh and adjoining districts is taken. It would seem, on the face of things, that Pittsburgh is not a desirable location for an industry whose source of supply is so far distant.

Let us, however, consider the other elements in the problem. Pittsburgh lies almost equidistant from the great markets of the East and West. From this point, under present conditions, the majority of iron and steel consumers in the United States can be most easily reached. This cannot be said of a location at the head of Lake Superior and, according to the rule of freight charges, the transportation of the raw material is usually preferred to that of the finished product. But there are other reasons for the pre-eminence of Pittsburgh as an iron and steel centre. The iron industry requires large supplies of coal and gas. Pittsburgh is built upon a coal bed, while nearby are the natural gas fields of western Pennsylvania. Furthermore, and most im-

portant of all, just south of Pittsburgh lies the famous Connellsville coke region, where, from a basin thirty miles long by three wide, the coal is mined, out of which nearly all the coke used in iron smelting in the United States is made.

79. *Proximity to supplies of coking coal.*—Coke consists of the fixed carbon of the coal with some of the carbon contained in the volatile matter. It is manufactured by burning a coking coal in a closed receptacle until nearly all the gas has passed off, leaving the carbon in large sponge-like pieces made up of myriads of little carbon cells, and greatly increased in bulk. This coke makes the best fuel for iron smelting for reasons which will now be given. Iron ore, as we saw, is composed of rock material and pure iron in combination with oxygen. In iron smelting the object is to free the iron from the oxygen and the impurities associated with it. This is done by mixing with the iron ore, in a blast furnace, some kind of fuel and a quantity of limestone in alternate layers, setting the mass on fire, and forcing a blast of air through it to hasten combustion. The oxygen is released during the process of burning and unites with the carbon in the fuel, while the limestone melts and unites with the rock material in the iron ore, forming what is known as slag. The iron is thus set free and becomes liquid, gradually sinking to the bottom of the furnace, while the slag, being lighter than the molten iron, floats on top of the iron. At the bottom of the furnace, at periodical intervals, the slag and the iron can thus be drawn off separately, and the iron can be run into sand molds and allowed to cool, when it is available for use.

Coke, as compared with soft coal, makes the best fuel for this purpose of iron smelting for three reasons: (1)

It does not run together and make a cake as does soft coal, so that it offers no obstacle to the passage of the air blast up through the furnace; (2) it retains its shape in the furnace and holds up the great weight which rests upon it, thus making combustion more perfect; (3) owing to its cellular structure it offers a greater burning surface and so produces a greater heat than soft coal. Hard coal, although formerly much used, is now so expensive as to be out of reach. Connellsville coke is by far the best and purest coke made, and Pittsburgh is nearer than any other iron centre to the Connellsville field. Pittsburgh, then, at the present time, is the place at which, all things considered, the materials of iron and steel manufacture can be most cheaply assembled, and from which the products can be most cheaply distributed. Chicago, Cleveland and Buffalo are also important iron centres, but either because of distance from large markets or long rail transportation of material, they have not yet attained the position that Pittsburgh enjoys, although, as the demand for steel in the West increases, that section will develop a much larger steel industry than it has at present. The United States Steel Corporation, recognizing the advantage of proximity of the mill to the rapidly growing markets of the West, has erected a group of steel-making plants at Gary, near Chicago, and another group of mills is projected for Duluth.

CHAPTER X

LARGE-SCALE PRODUCTION

80. *Large-scale production defined.*—Large-scale production is an indefinite term and in reality is merely relative. A process that would be classed as large-scale production in one generation would not be so classed in the next, because of improved methods; and further, it is impossible to say when small-scale production ceases and large-scale production commences in any given case. We may broadly define large-scale production as production which is carried on with sufficient capital to enable the producers to employ all of the most modern appliances and methods to facilitate and cheapen production. It now characterizes most of the leading industries in the iron industry of the United States.

Iron ore was discovered in the Lake Superior region when the iron industry of the country was already centered at Pittsburgh. Instead of moving the industry from Pittsburgh, the coal supply, to the Great Lakes, the iron supply, the manufacturers of iron chose to transport the iron to the coal district. The problem was, therefore, the cheap transportation of the iron ore to Pittsburgh. Steamboats carried the ore down the lakes to Conneaut at the foot of Lake Erie, and the ore was unloaded from the boats with wheelbarrows and shovels. Such a method would be characterized as small-scale production. To-day iron ore is dug from some of the ore fields with a steam shovel, just as dirt is dug out of a railroad cut. The steam shovel throws

the ore on the cars, which are hauled to the lake and the contents emptied into a high ore wharf. From this wharf the iron ore is dropped through chutes into the hold of the ore ships. In all of these processes no muscular energy has been devoted to lifting the iron ore. All of the work has been done by mechanical means.

The ore vessel proceeds to the lower lake ports, where special electric machinery operates huge grab buckets which drop into the hold of the ship, scoop up from six to ten tons of ore at once, and carry it to the cars waiting to convey it to Pittsburgh. By means of these grabs working on a modern ship, ten thousand tons of ore have been transferred from the vessel to the cars in six hours. The process of unloading the ore reduces the cost to the sum of two cents a ton, a price impossible to the small-scale producer, performing the work by hand labor.

Large-scale production is of comparatively modern development. It has been developed during the last quarter of the Nineteenth Century because the great aggregations of capital have made possible the installation of the mechanical appliances on which large-scale production so intimately depends.

81. *Centralization of production.*—Large-scale production means a centralization of larger amounts of capital, of more wage workers and of a greater product in fewer and fewer establishments. Instances showing this development can be picked from the tables almost at random. For example, the cotton goods industry had in 1850 a capital of $74,500,000; it employed 92,286 wage earners and produced $61,900,000 worth of product in 1,094 establishments. By 1870 the capital had increased to $140,700,000, the number of wage workers to 135,369, the product to $177,500,000, while the num-

ber of establishments had decreased to 956. In 1909, forty years later, while the amount of capital invested was $822,238,000, the number of wage workers employed, 378,880, and the amount of the product, $628,392,000, the number of establishments had increased only to 1,324.

The same centralization is shown in the slaughtering and packing industry. In 1880 the capital invested in this field was $49,419,000, and the number of wage workers employed 27,000, the value of the product $303,562,000. In 1909 the capital invested was $383,249,000, the number of wage workers 90,000, the amount of product $1,370,568,000. In this case the value of the product in 1909 was more than four times that in 1880, and the increase in the number of establishments during this period of thirty years was from 872 to 1,641, or only 100 per cent.

The conditions in the iron industry are particularly interesting, for there large-scale production has been brought to its highest perfection. In 1870 the production of pig iron employed $56,145,000 in capital and 27,000 wage earners. The value of the product was $69,640,000 and the number of establishments engaged in the industry 386. While there was a steady increase in the amount of capital and in the value of the product, the number of wage earners was 41,000 in 1880, 33,000 in 1890, and 39,000 in 1900, and 38,429 in 1909. Large scale production in the pig iron business is being carried on with a decreasing amount of human labor. The number of establishments was 341 in 1880, 304 in 1890 and 208 in 1909, or a little more than half the number in 1870. The capital invested was $487,581,000, or nine times the amount in 1870, and the value of the product was $391,429,000, or five and one-half times 1870.

Numerous other industries which have developed large-scale production might be cited to show a decrease in the number of establishments, and a small increase in the number of wage workers, side by side with a vast growth in capital and in the value of the product.

82. *Economics of large-scale production.*—The cause of the wonderful growth of large-scale production lies in the manifold advantages of this system of production over that which it displaced. Large-scale production makes possible a full utilization of the benefits arising from the division of labor.

In some cases it is only possible to produce cheaply if the division of labor is very considerable. Thus, in the departments of a large meat packing house, division of labor is carried to a great extreme, each man in turn performing one single operation on the animals, frequently not more than a single cut. A similar policy is followed by the large agricultural implement makers. In the boot and shoe industry there is both highly specialized machinery and considerable division of labor, but the fact that much of the machinery can be leased from the United Shoe Machinery Company for a rent of so much per pair of shoes made, enables the small manufacturer to produce under conditions almost as favorable as the large one. It permits the economical utilization of expensive machinery and equipment which the small scale producer cannot afford, or which it would not pay him to have because his small business would not keep it continuously employed.

In industries in which elaborate and expensive machinery is required, if production is to be conducted economically, there is no place for the small concern. This is particularly true of the iron and steel industries. The minimum capital expenditure for the equipment of

blast furnaces is high but in addition to this a very large outlay can be incurred in providing mechanical facilities for the handling of the heavy raw materials and finished products. Some of these mechanical facilities are essential and others are undoubtedly economical, though it may be possible to establish a plant on a paying basis without them.

83. *Other advantages of large-scale production.*— A third advantage of large-scale production is in connection with the purchase of materials and the sale of products. Large-scale producers can make a better use of by-products. In the mineral oil and the meat packing industries large-scale production has made possible the utilization of waste products to an extent undreamed of when these businesses were carried on by small concerns.

A fifth advantage is found in the large expenditures which a large-scale producer is able to make in experiments looking to the improvement of the technique of production. In businesses which are changing their methods continuously, to be the first to introduce a valuable innovation means often the difference between success and failure. Many of the manufacturing establishments which have been most successful in the United States in recent years, such as the Carnegie Steel Company of Pittsburgh, have owed their success, in no small degree, to their lavish expenditures on industrial experiments, and to the installation of new machinery as soon as its superiority to that in use has been demonstrated.

Running through all these various economies lies the important economy of reducing the cost of fixed charges in proportion to the total value of the product. The savings to be effected in fixed charges, owing to an increase in the scale of production, are by no means negli-

gible, though hardly sufficient by themselves to render production in a well-equipped, though small factory, remunerative. It is chiefly in the cost of buildings, power and superintendence that the large producer can hope to save, but even these economies appear to cease at a certain point, and frequently a firm will build and equip two or three moderate-sized mills rather than one very large one.

84. *Essential differences between large and small concerns.*—In almost every class of industry there are large and small concerns, and the important point to determine is in what way they differ from each other. Generally large concerns consist of a combination of small undertakings, either similar or dissimilar. Thus a large cotton spinning mill with 100,000 spindles is practically the equivalent of two mills with 50,000 spindles each. In this case the large concern is merely reduplicating the functions of a small concern, and if the latter is conducted on a scale which permits of efficient and profitable production, any small savings the former may effect by increasing the scale of production will probably be counteracted by loss occasioned through the absence of personal supervision.

On the other hand, a large meat packing factory is not a mere compilation of small meat packing factories. The former itself performs several functions which the latter has to have done for it. Thus the big packer does a great deal of his own preliminary subsidiary work; recovers sufficient by-products to make it worth his while to manufacture them into finished articles, and establishes an elaborate system for the distribution of his products.

85. *Broadening the scope of business operations.*—Frequently, when a manufacturer increases the size of his

plant there appears to be a tendency for him to undertake new functions. In this way, he hopes the work will be done better, or more cheaply or both. When his scale of manufacturing is such that an increased performance of one function is not likely to lead to a more than nominal increase of profits, the producer is likely to turn his energies in other directions, and in particular to undertake commercial functions, as it is almost always possible to effect economies along these lines, if the manufacturer produces on a sufficiently large scale. On the one hand, he hopes to reduce the cost of selling, and on the other, to secure a safer hold on the market, which may lead to a quasi-monopoly. This is only practicable when the goods bear a trade-mark or are made up in easily distinguishable packages, and are always sold under a particular name. If the manufacturer obtains a fairly secure hold on the market, he may be able to keep up prices, should the cost of production fall, or even raise the price, if he cannot increase his profits in any other way. This latter expedient, however, is a somewhat risky proceeding and may lead to a revulsion of public feeling such as broke up the English soap trust after it had existed three weeks in the autumn of 1906.

86. *Causes of the development of large scale production.*—It now remains to state the chief causes of the development of large scale production:

1. The invention of machinery and mechanical devices to take the place of human muscular power.

2. The application of steam to industry is an essential part of the development of inventions and mechanical appliances, because mechanical appliances would be useless without some kind of a power to drive them. In this application of steam to industry is included the development of the steamboat and the railroad and the

various kinds of factory machinery which have played so large a part in industrial development.

3. The development of labor saving machinery. While falling more or less under the first two headings, this third group is in a measure distinctive because, while in many countries power is applied to industry, in no country perhaps has labor saving machinery been so highly developed as in the United States.

4. The development through immigration of a large unskilled labor force. Great numbers of immigrant laborers began to come to the United States in the middle of the Nineteenth Century, and with the exception of a few intermittent periods, immigrants have been coming in large numbers ever since. The building of railroads, the development of manufacturing, in fact, the growth of most American industries have been carried on by this cheap foreign labor.

All of these factors combined have developed a transportation system without which the large scale production of the country would be impossible. For example, without improved methods of packing and rapid freight transportation it would be impossible to produce the meat that Chicago sends all over the world. Without cheap transportation the fruit grown in the West would not be sent to the East to feed the manufacturing population.

Large-scale production is dependent for its existence primarily upon mechanical power and mechanical ingenuity. It is a growth in business organization that owes its existence to the presence of ingenuity and organizing ability in the labor force.

Modern production tends to become concentrated in large establishments for the reason that it can be carried on most

economically in that manner. Large-scale production may secure the following economies:

1. Economy in fixed capital. Modern machinery is expensive, and requires expensive factory buildings. Machine production, therefore, necessitates a very large outlay for fixed capital; and this element of investment tends to increase each year. The statistics just presented show that, in the United States, the average amount of capital invested in a manufacturing establishment was about four and a half times as great in 1890 as it was in 1850, while at the same time the average number of laborers employed is less than twice as large. In the textile industries they show that, while the amount of capital invested in the average establishment has increased to five times the figures for 1850, the average number of laborers employed has increased less than three times. In the iron and steel industries it appears that the average investment of capital is nearly four times as large as it was thirty years ago, while the average number of employés is only two and one-half times as large. It is evident, therefore, that the cost of fixed capital is an increasing element in the cost of production. Now the cost of the fixed capital often does not increase proportionately as the product of the factory increases. For this reason such costs are termed the "fixed charges" of a business, since within certain limits they do not vary much, as the amount of business is larger or smaller. One large building may cost less than two small ones, while it may furnish room for the same amount of machinery. Generally a smaller expenditure for engines and other machinery will enable one large factory to turn out as large a product as two small ones. This is because no machine is needlessly duplicated in the large factory, while in the two smaller factories some of the machinery may be only half utilized for a considerable portion of the time. This often happens when costly machinery is required to perform some short operation, and would remain idle much of each day in a small factory where the product is not large enough to keep the machine constantly employed. Steam railroads, gas and electric-light works, and street railways are the most common illustrations of businesses

that require very large outlays of fixed capital. In these industries one company can, manifestly, supply the same territory with very much less unnecessary reduplication of tracks, gas pipes, electric wires, etc., than two companies would require. But the same thing is true, although sometimes to a less extent, of giant factories in which hundreds of thousands or even several millions of dollars are invested in land, buildings, and expensive machinery. In general, it may be said, that the larger the outlay of fixed capital, the greater are the economies that result from the concentration of production in a small number of large establishments. If the annual expenses for interest and replacement of fixed capital are $300,000 in any business, and the product is $1,000,000, then the costs of the fixed capital will be thirty cents for each dollar of product. Now if the output of the business be increased to $1,500,000 by merely utilizing the machinery to the greatest degree possible, then the costs of the fixed capital will be only twenty cents.

2. Economy may also be effected in the circulating capital. Less coal or lubricating oil may be required in one large factory than in two small ones. A large store need not have on hand at all times twice the stock of finished products that two small stores may require in order to enable them to meet any probable demand of their customers.

3. In experimenting with new methods and inventing new machinery, a large concern has a great advantage over a small one. Invention and experiment are often expensive processes which only a business possessed of large capital can afford. Some large concerns keep scientists and inventors at work endeavoring to improve the processes by which production is carried on.

4. Large-scale production often results in an economy of skill. Labor can be much more efficiently subdivided in a large business undertaking. Out of a great number of employés men of exceptional talents can be selected for the particular lines of work for which they are best fitted. A high specialization of work and a greater efficiency in the application of labor can be secured in this way. Sometimes an absolute saving may

be effected in the amount of labor required to do the same work. It is said that a steamer of two hundred or three hundred tons' burden needs one sailor for every 19.8 tons of cargo carried, while a steamer of eight hundred to one thousand tons requires only one sailor for each 41.5 tons. In many departments of production only a portion of the raw materials can be used for the purpose of producing the main products of each business. A considerable part of the raw material becomes waste unless some means can be found to utilize it. In a large business the amount of waste material is very great, and the incentive for saving it is correspondingly increased. In refining petroleum, material which was formerly wasted is now utilized for the production of lubricating oil, naphtha, and paraffine. So in the business of beef and pork packing, a more complete utilization of every part of the animal is effected in large establishments than could be secured in any other way. Hides, hoofs, horns, bones, blood, bristles, hair, are utilized in the production of leather, glue, fertilizers, etc.

5. Large business establishments can effect savings by carrying on for themselves allied or subsidiary processes. Large oil refiners make their own barrels, tin cans, tanks, pumps, sulphuric acid, etc. Large sugar refiners import their own raw sugar, own their own wharves and warehouses, and make their own barrels and boxes.[1]

[1] C. J. Bullock, "Introduction to the Study of Economics," pp. 178–181.

PART II: EXCHANGE

CHAPTER I

MEDIA OF EXCHANGE

87. *Necessity for exchange.*—We have seen how the efficiency of production is increased by the division of labor and the specialization of employment. The average output of the individuals—men, women and children—employed in the manufacturing industry in the United States in 1909 was $3,125, many times the value of the commodities which could have been produced by each man acting for himself, and singly performing all the operations which are now parceled out among thousands of workers scattered all over the world.

In order that each producer should be able to confine himself exclusively to one pursuit, that he should be permitted to devote his entire time to performing one operation out of a long series, to spend his days, for example, in polishing a saw or vamping a shoe, he must be able to exchange the product of his labor for the products of the labor of others. Everyone, no matter how simple his existence, needs a great variety of commodities. He cannot give his whole strength and time to making horseshoes or axe helves, unless he can in some way exchange these products for the products of the labor of others. This the organization of modern industrial society enables him to accomplish. By the institution of exchange, a great variety of occupations and

industries can be pursued by different people, at different times and in different places, each one giving his undivided attention to one operation, and exchanging what he produces for the manifold products and services which he requires.

88. *Two forms of exchange.*—Exchange may assume two forms: Direct exchange, which is called barter, where commodities are exchanged each for every other, as shoes for cloth, and indirect exchange accomplished through the instrumentality of the medium of exchange which is called money.

The first method, although employed on a limited scale, is so difficult and inconvenient that it may be considered entirely unavailable. The inconvenience of barter as a means of exchange arises from the lack of coincidence between exchanges which it involves. The shoemaker produces three pairs of shoes, and wishes to buy with them five yards of cloth. The cloth maker may not want shoes at that time, and in consequence the shoemaker's demand for cloth must go unsatisfied. This is an example of lack of coincidence in time. The anthracite coal miners use a large amount of sugar, but the sugar producers, living in a warm country, do not need fuel. It would be impossible, therefore, for this need of the miner for sugar to be satisfied by the method of barter. This is an example of the lack of coincidence in place. The silk manufacturers use a large amount of iron and steel in constructing their mills, but the families of the operatives in iron and steel mills use only a small amount of silk. Here is a lack of coincidence in products.

It is then apparent that the direct method of exchange, the method of barter, breaks down at every point. The inconveniences of barter, if men were

forced to resort to this method, would be so great as to more than offset all the advantages to be derived from the division of labor. Rather than rely upon barter, with its enormous loss of time, to supply him, in exchange for the results of his own labor, with the products of the labor of others, every man would prefer to make everything which he needed for himself. Division of labor, in other words, if barter were the only device open to exchangers, would be impossible.

89. *Medium of exchange.*—The inconvenience of barter, at an early period of civilization led to the introduction of a medium of exchange. It was early discovered that some commodity, such as cattle or sheep or iron, was in universal demand; that every producer needed this commodity at all times and was willing to give something in exchange for it. It, therefore, came about, in every country where exchanges were carried on, that some one commodity was fixed upon as the medium of exchange; i. e., as the good for which every one was willing to give that which he had for sale, because he knew that he could, in his turn, pass this commodity on to other producers in exchange for their products and services which he might require. By the selection of a medium of exchange the inconveniences of barter were entirely avoided. Every one exchanged his goods for the medium of exchange, and he kept this by him until he should have occasion to purchase something from another. The second party would in his turn gladly receive the commodity which was in universal demand, not to consume it himself, but to pass it on to others in further exchanges. The functions of money in exchange are as follows: Money serves as (1) a medium of exchange; (2) a common denominator of values, all commodities being placed on a basis by which

their value can be compared, by expressing them in terms of money; (3) a store of value; (4) a standard of deferred payments by which is meant that loan contracts are drawn in terms of money.

90. *Commodities used as medium of exchange.*—Many things have been used as money in different stages of civilization. Among savage tribes, the skins of animals have frequently served as money; among fishing tribes, dried fish formed the medium of exchange; among pastoral peoples, flocks and herds furnished that which best served as money. The early Latin tribes counted their cattle by the head (per capita) and from this is derived the modern expression "capital." In agricultural communities, wheat, maize, cocoanuts and tea have at different times served as the medium of exchange. All these commodities conformed to some of the requirements of a good medium of exchange; they all existed in sufficient quantities to enable them to serve this purpose, and they were universally acceptable in the places where they were used. They had, however, certain drawbacks which rendered them unavailable in a society where a large amount of exchanging was carried on.

91. *Characteristics of a medium of exchange.*—A commodity to serve as money must not only exist in large quantities, and be in universal demand, but it must admit of division into units. A great variety of commodities will be offered in exchange for the medium of exchange—wheat, corn, eggs, cattle, iron, etc. These commodities are of different weights and values. The medium of exchange must be able to accommodate itself to the great variety of conditions which is here presented. A man must be able to exchange a dozen eggs for the medium of exchange, and he must be able

to exchange his farm or his house for the same commodity. Furthermore, the commodity which serves as the medium of exchange, which we will hereafter term "the money commodity," must be uniform in quality so that everyone can be able to estimate the value of that which he has, in terms of the money commodity. The money commodity must likewise be durable, so as to protect it from decay. Finally, the money commodity must be portable, that is to say, it must unite large value with small bulk so that it can be carried about and used for exchanges in different places.

As a result of the experience of mankind, it has been found that the precious metals are best qualified to serve as money, and gold and silver have come gradually into universal use. Under modern conditions, these metals are much better adapted to serve as money than any other material. They are universally acceptable, they are uniform in quality, and they can be accurately divided into pieces of desired size; they are durable, they unite great value in small bulk and a large quantity of them is in existence. Gold and silver, furthermore, can be manufactured into coins—pieces of metal shaped and stamped—so as to prevent counterfeiting and to give the certification of the government as to their weight and fineness.

CHAPTER II

MONEY SYSTEM OF THE UNITED STATES

92. *The unit of value.*—Passing now from the general discussion of money, let us consider in more detail the monetary system of the United States—the medium of exchange that the American people use in their transactions. The basis of the American monetary system is the dollar. In England the money unit is known as the pound sterling; in Austria it is the crown; in Russia it is the ruble; in Italy it is the lira; in Spain it is the peso; in France it is the franc; in Germany, the mark. Each one of these terms signifies a certain weight of gold or silver. In the United States the dollar is 23.22 grains of fine gold, formed into a coin and stamped in a particular manner in the government mint. This dollar is the unit of value in our monetary system. Everyone who has anything to sell exchanges his products for dollars. He thinks of the value of these commodities in terms of dollars. The object of every man in business is to accumulate as large an amount of property expressed in terms of dollars as is possible. The entire business thinking of the United States is done in terms of this monetary unit.

93. *Kinds of American money.*—Besides the gold dollar, however, there are many other kinds of money in the United States. There are four kinds of gold coin; the two-dollar-and-a-half piece, the $5 piece, the $10 piece, and the $20 piece. The $20 piece contains twenty times the weight of gold contained in the dollar; the $5

piece, five times; and the quarter eagle, or $2.50, contains two and one-half times the amount of gold contained in the dollar. We have also in our monetary system several silver coins—the silver dollar, the half-dollar, the quarter and the dime; and we have minor coins, such as nickels and pennies, which are convenient along with the smaller silver coins in making change.

Besides this metallic money, there is in circulation a large amount of paper money known as the gold certificate, the silver certificate, the United States note or greenback, and the national bank note. These are issued in denominations of one dollar, two dollars, five, ten, twenty, fifty, one hundred, and (gold certificates) five hundred, one thousand, five thousand, ten thousand.

Each of these paper certificates is an express or implied promise of the government or of some bank backed up by the government, to deliver to the bearer the number of dollars, i. e., gold dollars—which is named in the certificate. For our present purpose, it is of no importance to distinguish between the various kinds of paper money, except to point out, as already suggested above, that paper money in the United States may be divided into two classes: (1) Certificates issued by the government and calling for redemption in metallic money, either gold or silver, the silver being also redeemable in gold, and (2) certificates issued by banks and calling for payment in any kind of lawful money of the United States.

94. *The equal value of paper money and coin.*— Leaving the further analysis of our monetary system for a later stage of the discussion, it is important now to observe what has come within the observation of everyone, that all parts of our monetary system are of equal value; that in common practice no greater im-

portance is attached to gold than to silver, and no greater importance to silver than to paper. In fact, the average business man objects to gold and silver coins. They are inconvenient to carry about and awkward to handle. He prefers some kind of paper money. It is evident, however, that the paper in itself has no value, and it should further be remarked that the silver dollars which are taken equally with gold and which, in fact, are more frequently met with in common circulation, are worth as bullion less than half of the value which is expressed upon their faces. In view of this fact, it is necessary to explain the universal acceptability of these paper certificates, which form the ordinary currency of the American people.

The explanation is simple; Paper money is taken as equivalent to gold because for all practical purposes it is equivalent to gold. By going through certain formalities every paper dollar now in existence in the United States can be exchanged for gold coins. The government, when application is made, will redeem any one of its promises to pay gold, according to the terms of the promise. There is, therefore, a universal confidence, although this confidence is not probably present in the minds of many exchangers at any given time, in the willingness and the ability of the government to maintain, through this process of redemption, all forms of paper money at par with gold.

95. *Government guarantees.*—The government also undertakes to maintain the national bank notes, familiar to us as five and ten dollar bills, on an equality with gold. Every bank is, as stated above, required to redeem its notes at its counter in lawful money of the United States, and lest the bank should become insolvent and unable to meet its obligations, the government

has on deposit at Washington an amount of government bonds equal to the amount of national bank notes outstanding in the hands of the people. If any bank fails to redeem its notes, the Treasury Department will sell these bonds and make the redemption.

The people have confidence in the ability and willingness of the government to keep all kinds of money which it issues at par with gold for three reasons: (1) Because the government has publicly declared its intention to redeem its promises to pay gold, according to the terms of the promise, and because this redemption is actually going on at all times; (2) because the government keeps in its vaults a reserve of gold coin and bullion which is never allowed to fall below $150,000,000. This is the visible evidence and support of the government's guarantee of redemption; (3) because the people know that in case their reserve should prove insufficient to redeem the paper it has presented for redemption, the government may obtain, through its borrowing power, any quantity of gold which may be needed. During the second administration of President Cleveland, $262,000,000 of government bonds were sold in order to obtain the means of redemption. On the basis of this confidence in the willingness and the ability of the government to make good its promises, the stability of our monetary system rests and by it the equal acceptance of all kinds of money by every exchanger is assured.

96. *Bi-metalism.*—In the United States, the basis of the monetary system is the standard dollar, composed of 23.22 grains of gold. This is the money of ultimate redemption. Until 1873 the dollar was either 23.22 grains of gold or 371¼ grains of silver. Until 1873, the United States Mint could coin either 23.22 grains

of gold or 371¼ grains of silver into a piece of money which would be called a dollar. The law of the United States provided that the creditor must accept either gold or silver dollars in payment of his obligation. This was what is called the double or bi-metallic standard. At different times, it has prevailed in every civilized country. This double standard may, however, be an alternating standard.

The precious metals have two uses, first as bullion in the arts, and second as coin. Their bullion value is regulated by the market, their legal ratio by law. When one ounce of gold exchanges in the market for seventeen or eighteen ounces of silver there is an inducement to buy silver for coinage and to melt down gold coin for sale in the bullion market. The supply of silver for the bullion market is, therefore, decreased and the supply of gold increased. If the increased demand for silver for coinage purposes and the increased supply of gold for the arts, at such a time, lowers the value of gold and raises the value of silver until the legal and market ratio again correspond, before gold has all been withdrawn from circulation, the double standard will be maintained, gold and silver circulating together. If all the gold retires from circulation, however, without restoring the legal ratio, the country in which this takes place will be on a silver basis.

97. *Abandonment of the double standard.*—The double standard was maintained in most European countries until after 1871. England had adopted the gold standard in 1816. In 1871, however, Germany ceased to coin silver as standard money; silver thalers were still coined, but they were limited in amount by the government and they were redeemed in gold. The action of Germany was followed by most of the other

European nations. In 1873 also the United States dropped the silver dollar from the list of standard coins, and in spite of a violent political agitation lasting from 1876 to 1896, which resulted in the purchase and coinage of a vast amount of silver token coins, the gold standard of redemption has been maintained. The money question is no longer a subject of political controversy.

The effect of this general refusal of the civilized world to longer coin silver at a fixed ratio with gold when presented at the Mint was to change from the double standard, so-called, to the single gold standard. The effect of this general rejection of silver was to lessen the demand for silver which in time resulted in a decline of 50 per cent in its price. Bi-metallism, properly speaking, no longer exists. A few nations, China being the most important, still adhere to the silver standard. It is expected that before many years the entire world will have adopted gold as a basis for its monetary system.

98. *Inconvertible paper.*—When these paper promises to pay money are redeemed according to the terms of the promises, the paper money is called convertible. When redemption is refused, however, the paper is called inconvertible paper. It has frequently happened that in order to obtain a forced loan without interest from the public, governments have issued promises to pay in the form of paper money without making any provision to redeem the promise. The money is accepted by the public and commodities and services are given in exchange for it. The only expense in putting it out is the expense of the paper and printing, and it has been considered by some persons as a most economic method of raising funds.

When paper money is inconvertible, it usually circulates at a discount, the amount of discount depending upon the number of notes outstanding and the prospects for their redemption according to the terms of the promise. The effect of this fall in the value of money is to raise prices, and, as the conditions affecting this value are constantly changing, the valuation of money and the prices of commodities under a system of inconvertible paper are subject to incessant fluctuations. The result of these fluctuations is to disturb business and, therefore, because it makes all future calculations uncertain, inconvertible paper money increases the risk and hazard of commercial operations. If these notes are made legal tender, which usually happens; that is to say, if the creditor is required by law to accept them in payment, the effect of the inevitable fall in the gold value of the paper money will be to inflict heavy losses upon the creditor who may have loaned money before the issue of the inconvertible paper. Working men also suffer from its issue, because their wages change slowly while the prices of that which they buy rapidly advance. In other words, the purchasing power of wages declines.

Foreign commerce is also disturbed by the issue of inconvertible paper and sellers must first establish prices in gold and silver which are out of circulation, because although they are worth no more than paper for debt-paying purposes, they are worth much more as bullion. After making this double calculation, the man engaged in foreign trade must then find out what gold and silver are worth in paper, since the value of paper is constantly changing. The result of this calculation is always uncertain, and this seriously interferes with foreign commerce.

99. *Paper money issues during the Civil War.*—All the effects of inconvertible paper which have been mentioned were experienced by the United States during and after the Civil War. In order to obtain funds for the payment of the troops, paper money was first issued, as a war measure, in 1862. Gold immediately disappeared from circulation because these promises to pay gold were not redeemed according to the terms of the promise, and no one would give gold in exchange for them, if the government refused to do this. The country was on a paper basis until 1879. The value of the dollar as a result of the general uncertainty as to redemption and in part, also, of the successive issues which raised the amount outstanding at one time to nearly $500,000,000 fell in 1864 below forty cents in gold.

The results of this issue of depreciated paper are now generally admitted to have been bad and the issue itself unnecessary. Prices rose to enormous figures, and business was carried on under highly speculative conditions, the value of the wages of workingmen and soldiers was seriously reduced, and foreign trade was greatly disturbed.

In 1876, after a bill providing for an indefinite continuation of the system of issuing paper had been vetoed by President Grant, Congress passed a law that on January 1, 1879, all paper should be redeemed in gold, and authorizing the Secretary of the Treasury to collect a fund of gold for this purpose. In accordance with the act of Congress, Secretary Sherman collected a large redemption fund, and on the date specified redemption or "resumption" as it was called, was successfully accomplished. Since that time paper money has been kept at par with gold.

CHAPTER III

CREDIT

100. *Credit defined.*—It cannot have escaped the observation of every one who has had money to pay or to receive, that the amount of actual cash which comes into his hands is very much less than the amount of money which is represented by the bank checks and drafts which he receives. Every business man knows from his experience that probably nine-tenths, or at any rate a large proportion of his purchases and sales, are made by the use of these so-called "credit instruments." Some large business concerns never receive or pay a dollar in cash. It is, therefore, necessary in concluding our discussion of the media of exchange to take account of credit—the most important element.

Credit may be defined as a promise or contract to pay money on demand or at a future time. This promise takes various forms. A promissory note is perhaps more familiar to the average man than any other form of credit. An accepted draft is another form; a book account is a third, and a bank deposit is a fourth. These promises to pay money are given in exchange either for commodities, as when a man buys a horse and gives his note for sixty days for the purchase price, or where a farmer sells his cattle to a commission house and draws a draft upon the purchaser, instructing him to pay to a third party the amount due. Or these promises to pay money may be given in exchange for money, as where a manufacturer borrows $10,000 to pay wages

and gives his note at three months to the lender to secure the return of the money. The most universal kind of credit, however, although a form least understood by the average man, is bank credit, which is represented by bank deposits.

101. *Functions of a bank.*—A bank is an institution engaged in the safe keeping of money and other valuables, in transmitting funds from one place to another, in making loans and in buying promises to pay money in exchange either for money or for its own promise to pay money. These are the important functions of a bank, although the banker performs many other services to the community.

The first two functions above mentioned need not detain us. They are familiar to every one. Few people now keep much cash on hand, and most people, in addition to putting their money into a bank for safe keeping, also entrust the bankers with the custody of other valuable property, such as jewels and plate.

The third function of a bank, however, although most important, is least understood. The business of the banker, in common language, is to lend money. The process of lending is simple. A man wishes to borrow $1,000 for use in his business. He makes out his note at three months for that amount, endorsed, that is guaranteed, by some other responsible person known to the banker, and he takes this to the bank to be discounted. If the rate of interest is 6 per cent, the bank will buy this note from him for $985, deducting 6 per cent interest for three months from the face of the note. The note is now the property of the banker, and he has given in exchange for it, to the lender, the right to call upon him at any time for $985. This operation is called lending money; in reality it is the purchase

by the bank of a promise to pay money. The borrower may now do one of two things; he may either write out a check for $985, payable to himself, step to the paying-teller's window and draw out the money, or he may leave the money on deposit. As a depositor, he becomes the creditor of the bank. The bank is liable to him for the payment of $985 on demand. On the other hand, the bank is his creditor for $1,000. He is liable to the bank, three months from the date of the loan, for the payment of that amount.

In all probability our borrower will take the second course. He will not draw out the money, but will take a check-book instead. By means of checks, which are orders upon the bank signed by himself to pay to certain other persons or to himself the amount of money named in the orders, the borrower can at any time draw out such part of his balance as he needs, and can also make payments to others by transferring to them his right to receive money on demand from the bank. These checks are readily accepted in satisfaction for claims by those who do business with him, provided they know that he is responsible and would not draw checks for a larger amount than his bank balance.

The creditors of the borrower are not obliged to receive his checks in payment. Checks are not legal tender. If his creditors insisted upon it, he would be obliged to go to the bank, draw out the money and make his payments in that form. As a matter of common convenience, however, checks are universally accepted by business men in payment for every description of claim.

102. *Checks as a medium of exchange.*—These checks, as remarked above, constitute the principal medium of exchange in the United States. Nearly all buying and

selling is done in this way. All large transactions are accomplished by the use of checks. The largest check ever drawn was that drawn by the Secretary of the Treasury for $40,000,000 in favor of the stockholders in the Panama Canal Company to pay for their property and rights that they had transferred to the United States. During 1912, the exchanges of checks reported as passing through bank clearing houses in the United States was $174,926,921,000. They are the almost universal medium of exchange.

The result of this general use of credit instruments in making payments is that the bank is able to sell a much larger amount of promises to pay money in the form of bank deposits than the amount of money which, at any given time, it has on hand to redeem its promises. This may be best understood from a concrete example.

Mr. John Smith is a miller in Minneapolis. He has bought at 70 cents a bushel 100,000 bushels of grain from William Brown, a grain dealer of Fargo. Mr. John Smith has a bank deposit in the First National Bank of Minneapolis of $100,000, that is to say, the First National Bank has given to him the right to draw against it at any time for that amount. He owes $70,000 in payment for his wheat, and he sends a check for this amount to Mr. Brown at Fargo. Mr. Brown is now entitled to have $70,000 of the deposit of the $100,000 standing to the credit of Mr. Smith on the books of the First National Bank of Minneapolis, transferred to his own credit. If he should go to Minneapolis, present this check to the paying-teller of the First National Bank and be properly identified, the teller would pay to him $70,000 in currency which he could carry away with him or otherwise dispose of.

Business, however, is not transacted in this way. If Mr. Brown had an account in the Minneapolis bank he would deposit the check to his credit. He has, however, no account in this bank, and he therefore deposits the Minneapolis check with his own bank, the Fargo National Bank, for collection. The Fargo bank gives him credit on its books for $70,000, which entitles him to receive that amount on demand, in return for an order drawn by Mr. John Smith of Minneapolis in favor of Mr. William Brown of Fargo and endorsed, that is, signed over to the Fargo National Bank by the latter. The Fargo Bank now sends this check to its correspondent in Minneapolis to collect from the First National Bank.

103. *The clearing house.*—While these transactions are going forward, Fargo merchants who deal extensively with Minneapolis, have bought coal and other supplies from Minneapolis, and they have paid their Minneapolis correspondents by checks on the Fargo National Bank. The Minneapolis dealers, we will suppose, are all depositors with the First National Bank of that city. They deposit these checks, which may aggregate $80,000 in amount, with the First National Bank. These checks are now cleared, that is to say, offset against each other through the Minneapolis Clearing House. At ten o'clock every morning all the banks of Minneapolis send to this institution, which they maintain for the purpose, all the checks, drafts and bills of exchange drawn upon other banks which have come into their hands during the last twenty-four hours. Suppose there are twenty banks in the Clearing House. Each one of these banks will have claims against every other bank, either on account of checks

deposited with it against these other banks, or against banks for which these other banks act as correspondents. These claims are now offset against each other.

We can understand this best by continuing our illustration: The First National Bank of Minneapolis takes to the Clearing House $500,000 in checks against other Minneapolis banks. Among these checks are those for $80,000 sent from Fargo and deposited with the First National. Every other bank in Minneapolis brings to the Clearing House checks and other claims against the First National Bank for $490,000. Among these claims, is the check for $70,000 drawn by John Smith in favor of William Brown, of Fargo, South Dakota, deposited by William Brown in the Fargo National Bank and sent by the Fargo National Bank to its Minneapolis correspondent. Here then is the situation: The First National Bank owes to all the other banks of Minneapolis $490,000; the other banks owe the First National $500,000. These claims will be liquidated or cleared, as between the First National and the other members of the Clearing House, by the paying of $10,000 by the other banks to the First National. The same may be said of every other member of the Clearing House. Every bank reports claims against every other member. A comparison of the debits with the credit of each bank shows either that every member of the Clearing House owes something to the other members, or is owed something by them. All these claims can be cleared or liquidated, therefore, in case the debtor banks, that is to say those banks whose claims against other banks are less than the sum of other banks against them, pay to the Clearing House the amount of these differences, and on the other hand, if the creditor banks receive this amount in

due proportions from the Clearing House. The First National was creditor on the day in question to the extent of $10,000. At the close of the day, therefore, it received $10,000 from the Clearing House.

104. ***The deposit currency is a check currency.***—The most important result of this operation has been already suggested. Because the checks which are drawn against the First National of Minneapolis by its depositors are constantly being offset through the Clearing House by checks upon other banks deposited with it for collection, the First National Bank is able to issue promises to pay money in the form of deposits whose aggregate amount is several times greater than the amount of cash which it has on hand. On September 6, 1904, this bank reported $5,271,073 of deposits and $981,856 of cash. Its liabilities to pay money on demand, it will be seen, were over five times as great as the amount of money it had to meet these obligations. This is made possible by the constant stream of claims upon other banks which is flowing into the First National Bank for collection, and also by the constant stream of payments on account of its loans. As a result of this offsetting of claims against each other, the First National Bank of Minneapolis is able to issue and to keep in circulation by means of checks drawn by its depositors, an amount of promises to pay several times the sum of money which it has on hand. These promises to pay circulate throughout the West and may even travel to New York, Boston or San Francisco, everywhere paying debts, buying commodities and performing the work of money. These bank deposits therefore are, properly speaking, to be included among the funds of the community. They constitute a part and the most important part of the medium of exchange. They are

not money; they are merely promises to pay money, but owing to the development of banking methods, these credit instruments perform all the work which money would otherwise be called upon to do. We may call these funds, therefore, credit funds as distinguished from the money funds already described.

105. *Limitations of bank credit.*—The issue by banks of promises to pay money is limited by its cash reserve. Both experience and law require that the bank should keep a certain proportion of its deposits in cash with which it may redeem its obligations, because if they are not met when presented the bank must close its doors. This percentage varies from 10 to 25 per cent in the United States, and in this way the issue of promises to pay money is limited by the amount of money which the bank keeps in its vaults, which in turn is limited by the requirements of the community for cash with which to carry on retail transactions, such cash being withdrawn from bank reserves.

106. *Extent to which "promises to pay" are used.*—We see now that the work of exchange in the United States is performed almost entirely by promises to pay gold, either directly or indirectly. The government issues promises to pay gold in the form of paper money; the banks issue these promises in the form of bank notes, and these notes are practically guaranteed by the government. These promises to pay gold are taken as equivalent to gold because the government stands ready to redeem them in gold at any time. A much larger part of the work of exchange, over 90 per cent of the whole number of exchanges, is performed by the use of credit instruments—promises to pay money on demand which are sold by the bank to its borrowers and depositors. These promises are accepted at par

with actual money because their makers are known to be responsible and because at any time a check can be turned into money at the bank.

107. *Basis of bank credit.*—The confidence in the bank's ability and willingness to redeem its promises to pay, according to the terms of the promise, is based upon three things: (1) Upon the reputation and business standing of its directors and officers; (2) upon the money reserve of the bank—an amount of cash held in its vaults, usually from 10 to 25 per cent of its obligations outstanding against it—an amount which is deemed sufficient to meet any actual demand for cash which may arise; (3) upon the bills receivable of the bank, mainly consisting of the promises to pay money, sold to it at different times by its customers and coming due in an uninterrupted series.

We see then that the basis of bank credit is almost identical with the basis of government credit. The reasons why the bank's promises to pay are taken at par with gold, are generally identical with the reasons which influence exchangers to accept paper money at par with gold. In each case there is a general confidence in the willingness of the government or of the bank to redeem its promises, and as a specific and convincing evidence of the ability to redeem, there is (1) a store of actual cash and (2) evidence of the ability to get cash, if this store should be exhausted.

We now understand the composition of the medium of exchange in the United States. It is, all of it, based upon gold as a foundation. Besides gold, there are promises to pay gold issued by the government and promises to pay money issued by the bank. This medium of exchange can also be divided into money funds —gold and promises to pay gold—and credit funds—promises to pay money.

CHAPTER IV

BANKING SYSTEMS

108. *The organization of national banks in the United States.*—The National Banking Law of the United States dates from February 25, 1863. Most of the large banks are now organized under this law. On September 4, 1912, there were 7,397 national banks with $1,046,012,580 of capital, $6,061,009,345 of loans, and $5,891,670,007 of deposits. The organization of the system is as follows:

There is a bureau in the Treasury Department which has charge of the national banks. At its head is a special officer known as the Comptroller of the Currency. Any number of persons, not less than five, may form an association for banking purposes, to continue for twenty years. To this association, the Comptroller of the Currency, in his discretion, grants a certificate authorizing them to begin the business of banking under the National Banking Act. Every national bank located in towns of 3,000 inhabitants or less is required to have a capital of $25,000; in towns from 3,000 to 6,000, $50,000 of capital is required; from 6,000 to 50,000 inhabitants $100,000 capital; and in cities of over 50,000, $200,000 capital is required for every bank. Fifty per cent of the subscribed capital must be paid in in cash before the bank can begin business, and the remainder must be paid in monthly installments of not less than 10 per cent each.

109. *Powers of national banks.*—The powers of

national banks are as follows: They may discount promissory notes, drafts, bills of exchange and other evidences of debt; they may receive deposits, buy and sell bills of exchange, coin and bullion, loan money on personal security and issue circulating notes. They are not allowed to hold real estate outside of their banking property, except when they acquire this as security for bad debts, in which case they must sell the real estate within five years. The reason for this provision is that real estate is not quickly convertible into money, and a bank should have all its assets in a readily convertible form, since its liabilities are payable in cash on demand. Every bank before beginning business must deposit with the United States Treasury a certain amount of United States bonds. Banks with a capital of $200,000 or less must deposit bonds equal to at least one-fourth of their capital. Those whose capital exceeds $200,000 must deposit at least $50,000, but need not deposit more.

Each bank, after depositing these bonds, is entitled to receive from the Comptroller an amount of circulating notes equal to the par value of the bonds deposited. The amount of bonds which any bank is allowed to deposit must not exceed its paid-in capital stock. These bank notes are receivable at par for all dues to the United States, except duties on imports, and are payable for all debts owed by the United States, except interest on the public debt. Every bank must receive the notes of every other bank at par, and each bank must redeem its circulating notes on demand at its own counter. It must also keep on deposit with the United States Treasurer an amount of lawful money equal to 5 per cent of its circulation to be held for the redemption of its notes. The national banks have a monopoly of the privilege of note issue. In order to

encourage the formation of national banks after the act was passed, a tax of 10 per cent was levied upon all other bank notes, thus compelling most of the state banks to take out national charters and to buy government bonds. The sale of bonds was the original object of the act. In case of default by any bank in the redemption of its notes, the Comptroller may sell the bonds deposited and redeem the notes out of the proceeds. The note issues of the national banks are much less important than their deposits, and for the protection of the depositor the National Banking Law provides certain reserve requirements.

110. *National bank reserves.*—Every bank in certain large cities, designated as reserve cities, must keep a reserve of lawful money equal to 25 per cent of its deposits. One-half of this reserve may be deposited with national banks in New York, Chicago, or St. Louis, which are known as the "central reserve cities" and still be counted as a part of the legal reserve. All other banks must keep a reserve of 15 per cent of their deposits, three-fifths of which may be deposited with the reserve or central reserve city banks. If a bank increases its deposits so that its reserve falls below the requirement, the Comptroller may notify the bank that it is violating the law, and if it fails to bring up this reserve, it may be put into liquidation. No national bank may lend more than one-tenth of its capital and unimpaired surplus to any one person, corporation or firm. This does not apply to the discounting of commercial paper or bills of exchange.

The business of the bank is managed by a board of not less than five directors, each of whom must own at least ten shares of the capital stock. The stockholders of a national bank are held individually liable

for the debts of the bank to an amount equal to the par value of their shares. This is what is known as the double liability of national bank stockholders.

111. *Bank of England.*—The Bank of England is the most important bank in the world because it furnishes the circulating medium of Great Britain and because it acts as the fiscal agent of the British government. This bank is a private corporation which is given certain privileges by law, and which is held to certain requirements. In its deposit functions the Bank of England is subject to no restrictions, but its issue of notes must be made according to a law passed in 1844.

The Bank of England is allowed to issue notes against securities held in its vaults to the amount of $88,875,000. Any additional notes which are issued must be secured by a deposit of gold coin or bullion to an equal amount. The Bank of England maintains a very large reserve against its deposits on account of the fact that the joint stock banks and private banks which do most of the banking business in the United Kingdom deposit nearly all of their cash with the Bank of England. The entire credit structure of England rests therefore upon the reserve of coin and bullion which is kept in the Bank of England and which seldom falls below 45 per cent, frequently rising to 55 and 60 per cent.

112. *Bank of France.*—The Bank of France also acts as the fiscal agent of the French government, and has a monopoly of note issue in France. It is authorized by law to issue 5,000,000,000 francs, equivalent to $1,000,000,000, of notes. This is a private bank, the government having no control over it, and its reserve is not stipulated by law. In practice the reserve which the Bank of France keeps against its circulating notes is almost equal to the amount of notes outstanding. The

deposit and check system is little used in France, most of the business of that country being transacted with bank notes. These notes, owing to the large reserve which the bank keeps, are as well secured as those of the Bank of England or of the national banks of the United States.

113. *Imperial Bank of Germany.*—The Imperial Bank of Germany was established in 1875. This is a government institution. The president and directors are appointed by the German Emperor for life, and the officers of the bank are considered government officials. The shareholders have some control over the management through a committee which they appoint. At the time the bank act was passed, there were thirty-two independent banks in the German Empire, having the right of note issue. This right they retain and are allowed to issue 135,000,000 marks ($33,750,000) in notes, against which no cash reserve is kept, while the Reichsbank, or Imperial Bank, is allowed to issue 250,000,000 marks ($62,500,000) of uncovered notes. When any private bank ceases to issue notes, its rights of note issue pass to the Reichsbank. The uncovered issues of the Reichsbank have since its establishment been increased by law to 450,000,000 marks ($112,500,000). For any notes above this amount the bank must hold an equal amount of cash in its reserve, but it may exceed this limitation of cash reserve by paying to the Imperial Treasury a tax of 5 per cent on the surplus issue.

114. *Protection of bank note issues.*—It will be observed from the foregoing that the right of issuing bank notes in these four countries which have been examined is very strictly limited by law. It is felt that bank notes which serve as money and which are received

as money by everyone, should have special safeguards and protections thrown about them to insure their immediate convertibility. This is accomplished in the United States by the bond deposit and by the redemption fund; in England, by the reserve of securities against uncovered notes; in France by the custom of keeping a reserve of cash equivalent to the amount of notes outstanding, and in Germany by a reserve of securities with cash deposits for any notes in excess of a sum fixed by law.

115. *Asset currency.*—It has been recently proposed in the United States that the national banks should be allowed to issue notes on the security of their assets, on the ground that the national bank currency does not increase and decrease according to the demands of trade. These asset bank notes, if they should be authorized, would increase and diminish in exactly the same manner as the bank deposits do at present, and they would serve a useful purpose in supplying special demands for cash especially in the West and South at certain seasons of the year. These western and southern banks during eight months of the year, under the provisions of the National Banking Law, deposit a large amount of their cash in the eastern cities. This money goes into the reserves of the eastern banks and is made the basis of deposit credits. In the late summer and fall, cash is needed in the West and South to move the crops and pay the farm hands. These western and southern banks at this time call back the cash which they have in eastern cities, reducing the reserves of these eastern banks, forcing them to call loans in order to reduce their deposits to the legal requirement, and this return movement of cash frequently results in severe stringency in the money market. It is argued that if the national

banks were allowed to issue notes against their deposits, this withdrawal of money from the East could be avoided. On the other hand, asset bank currency is severely criticised on the ground that the security of these notes would be inadequate and that the money of the people cannot be too thoroughly protected.

Asset bank notes, moreover, it has been pointed out by Professor Joseph French Johnson [1] and other writers on finance, would not furnish an elastic currency because of the existence in circulation at present of a large amount of token paper money suitable for use in bank reserves. National banks are not allowed to include national bank notes in their reserve. The effect of issuing more bank notes under some asset currency plan, would be, therefore, that the banks would substitute the new notes by paying them out over their counters, for an equal amount of legal tender money, which they were formerly obliged to pay out into the circulation but which they could now place in their reserves, enlarging in this way the basis of their loan credit. Under these circumstances, the currency would not be elastic, since it would be profitable for the banks to maintain them in circulation, and the only substantial change from the present system would be a considerable expansion of bank deposits and loans on the strength of these larger reserves.

[1] See "Money and Currency," by J. F. Johnson, Chapter XV; "Schemes for Currency Reform," by J. F. Johnson, *Journal of Accountancy*, January, 1908; also Volume V of *Modern Business*.

CHAPTER V

PRICES

116. *How value is determined.*—What is value? We have already defined this term in a general way in discussing wealth. A thing is economically valuable which has utility or desirability, and which is so limited in quantity that it can be appropriated as private property. The value of any commodity is measured by the quantity of other goods which will be given to obtain it. For this reason, the value of any commodity must be expressed in terms of some other commodity; thus a bushel of wheat is worth 142 pounds of pig iron or 23.2 grains of gold. Every commodity may, in this way, be related to every other commodity in terms of value.

That a thing may have any value in exchange, two conditions are necessary. It must be of some use; that is (as already explained) it must conduce to some purpose, satisfy some desire. No one will pay a price, or part with anything which serves some of his purposes, to obtain a thing which serves none of them. But, secondly, the thing must not only have some utility, there must also be some difficulty in its attainment. "any article whatever," says Mr. DeQuincey,[1] "to obtain that artificial sort of value which is meant by exchange value, must begin by offering itself as a means to some desirable purpose; and secondly, even though possessing incontestably this preliminary advantage, it will never ascend to an exchange value in cases where it can be obtained gratuitously and without effort; of which last terms both are necessary as limitations. For often

[1] "Logic of Political Economy," p. 13.

it will happen that some desirable object may be obtained gratuitously; stoop, and you gather it at your feet; but still, because the continued iteration of this stooping exacts a laborious effort, very soon it is found, that to gather for yourself virtually is not gratuitous. In the vast forests of the Canadas, at intervals, wild strawberries may be gratuitously gathered by shiploads; yet such is the exhaustion of a stooping posture, and of a labor so monotonous, that everybody is soon glad to resign the service into mercenary hands." [1]

Upon what now does the value of any commodity depend? Upon what is known as its marginal or final utility—that is to say, the estimate of the intending purchaser as to the desirability of the last bushel of wheat, the last pound of cotton or the last yard of cloth which is offered to him. It is a well-known fact, of which any one can satisfy himself by observation, that the satisfaction derived from the use of any commodity diminishes as the quantity of that commodity to be used or consumed is increased. An amusing illustration of this is furnished by the attempts of the summer boarder to satisfy his appetite for peaches or grapes; he very soon discovers that the satisfaction derived from the consumption of fruit diminishes rapidly as the amount eaten increases.

In the field of exchange, since each apple or each yard of cloth of a given quality or grade is identical with every other apple or yard—no greater importance will be placed upon the last unit of the commodity than upon the first. In other words, the utility or desirability of every bushel or pound or yard of a commodity will be the utility or desirability of the last or final unit offered for sale. As the utility of an increasing supply of a commodity declines, the sacrifice

[1] J. S. Mill, "Principles of Political Economy," Book III, Chapter II.

which will be made by some other than its owner to obtain possession of it, expressed in terms of the commodities which the intending purchaser has to offer, declines also; in other words, the demand weakens. As a result let us say, of the increasing supply of, and the decreasing demand for, wheat as compared with cloth, the value of wheat, in terms of cloth, declines and conversely the value of cloth in terms of wheat rises.

We thus arrive at an explanation of the well-known law of political economy, that value depends upon the interaction of supply and demand; in common language, value depends upon supply and demand. So much for the theoretical aspect of the value question.

In effect, the importance of any unit of a commodity is determined by the want-satisfying power of the marginal unit. The importance of a unit, thus determined, is termed its effective utility.

But does any man really arrange his wheat or other goods in series of units and say to himself: "This unit is worth one thousand x; without it I should starve; this unit is worth one hundred x, as my comfort and strength depend upon it; this unit is worth five x, for if I did not have it I should be compelled to do without my pets"? Not at all; the different units are just alike, and one is thought of as just as desirable as another. For practical purposes, the utility of one unit is the same as that of another. Let us suppose that there are four units of wheat, and that the last has a utility of five x. What is lost if any one of the four units is lost? Simply five x. What sacrifice would one make to prevent the loss of any unit, even the one which would have been used to sustain life, and by itself would be worth one thousand x? A sacrifice not greater than five x. For if any other unit is lost, the least important one will be substituted for it, and the effective loss will be properly placed at five x.

The utility of the last and least important unit, then, exer-

cises an important influence in determining what utility one will in effect ascribe to any unit. For practical purposes the utility of any unit is exactly equal to that of the least important one. The utility of a unit, thus measured by that of the least important one, is called "effective utility."

If the total number of units of a good is so great that the last one has no utility, the good has no effective utility at all. No one will do anything to prevent the destruction of part of his supply; no one will give anything to increase his supply. Thus water, although a single gallon would have indefinitely great utility if this were the only gallon available, is in most places so abundant that the last units of the supply have no utility. Therefore no unit has effective utility.[1]

117. *Value of commodities expressed only in money.* —In our discussion of money we found that everything was exchanged for the medium of exchange, and conversely, that the medium of exchange was exchanged for every commodity that is produced. The division of labor, through which the modern miracles of production have been accomplished, was only made possible because every productive agent and every locality was, through the institution of exchange, left free to be devoted to some highly specialized employment. The result of this institution of money exchange is that commodities are never in actual practice expressed in terms of each other, but in terms of money. When a farmer takes his wheat to market he is not thinking of the value of that wheat in terms of lumber, coal or groceries. He may have use at that time for none of these things; he is thinking of its value in terms of money. He is not interested in how much cotton cloth he can get for his wheat, but in the quantity of money he is to receive.

The concern of every producer is not with com-

[1] Alvin S. Johnson, "Introduction to Economics," Chapter II, pp. 27–28.

modities either in general or in particular, but with money. The laboring man does not habitually think of his wages as so much bread, meat and clothing, but as so much money. Only when the individual comes to part with his money in the store or the market, does the ultimate importance of commodities in exchange arise. In reality, every producer is striving for the necessities, comforts and luxuries of existence. In appearance and in present fact, however, his sole concern is with money. It is, therefore, with money as an end rather than as a means to an end that we have now to concern ourselves.[1]

[1] Money, when its use has grown habitual, is the medium through which the incomes of the different members of the community are distributed to them, and the measure by which they estimate their possessions. As it is always by means of money that people provide for their different necessities, there grows up in their minds a powerful association leading them to regard money as wealth in a more peculiar sense than any other article; and even those who pass their lives in the production of the most useful objects, acquire the habit of regarding those objects as chiefly important in their capacity of being exchanged for money. A person who parts with money to obtain commodities, unless he intends to sell them, appears to the imagination to be making a worse bargain than a person who parts with commodities to get money; the one seems to be spending his means, the other adding to them. Illusions which, though now in some measure dispelled, were long powerful enough to overmaster the mind of every politician, both speculative and practical, in Europe.

It is evident now, however, that the mere introduction of a mode of exchanging things for one another, by first exchanging a thing for money, and then exchanging the money for something else, makes no difference in the essential character of transactions. It is not with money that things are really purchased. Nobody's income (except that of the gold or silver miner) is derived from the precious metals. The pounds or shillings which a person receives weekly or yearly, are not what constitutes his income; they are a sort of ticket or orders which he can present for payment at any shop he pleases, and which entitle him to receive a certain value of any commodity that he makes choice of. The farmer pays his laborers and his landlord in these tickets, as the most convenient plan for himself and them; but their real income is their share of corn, cattle and hay, and it makes no essential difference whether he distributes it to them directly or sells it for them and gives them the price; but as they would have to sell it for money if he did not, and as he is a seller

118. *Prices and profits.*—We shall now discuss prices as expressing the value relation between commodities at any particular time. It really makes no difference whether prices are high or low if all prices (including labor) are high or low at the same time. It is the time relation which is of interest. What will prices be next week, next month, or next year? This is the important question.

In changes of price are found the profits or losses of industry. The incentive to economic activity is the desire for profit. Under present conditions, however, man works because he sees something ahead for himself and personal profit is the mainspring of effort. Profits consist in the margin between cost and selling price. Costs are made up of the price paid for raw materials, wages, fixed rentals, depreciation of plant, bad debts and other losses that would have to be written off. Each one of these items moves much more slowly up or down than the price of the product. Fixed charges, such as interest, do not move at all; wages move very slowly. The element of depreciation is fixed. We have one rate for brick buildings, another for frame buildings and another

at any rate, it best suits the purposes of all, that he should sell their share along with his own, and leave the laborers more leisure for work and the landlord for being idle. The capitalists, except those who are producers of the precious metals, derive no part of their income from those metals, since they only get them by buying them with their own produce; while all other persons have their incomes paid to them by the capitalists, or by those who have received payment from the capitalists, and as the capitalists have nothing from the first except their produce, it is that and nothing else which supplies all the incomes furnished by them. There cannot, in short, be intrinsically a more insignificant thing, in the economy of society, than money; except in the character of a contrivance for sparing time and labor. It is a machine for doing quickly and commodiously, what would be done, though less quickly and commodiously, without it; and like many other kinds of machinery, it only exerts a distinct and independent influence of its own when it gets out of order.—J. S. Mill, "Political Economy."

for machinery, etc., but they do not change. Selling and administration expenses do not greatly change. The only thing that does change to any extent is the price of materials. Of all these items of expense, the last named is the only one that you can modify at the same rate as the price of the product. The result is that expenses move up or down very much more slowly than the selling price of the product. Since expenses change much more slowly than the price of the product, a rise in the price of anything means an increase in the profits of the man who produces that product, and on the other hand, a fall in prices almost always means a decrease in profits. It is unusual that any one's expenses should increase as rapidly as the price of his products. It is even more unusual that a man should decrease his cost of production as rapidly as the price of his product declines.

From these facts we arrive at the conclusion that rising prices mean profits to everybody interested, and that falling prices mean falling profits. Since large profits are the object of every business man's endeavors, the question of price is the most important fact of the business world. The man who knows the laws influencing prices in his business is assured of success.

Professor Johnson, in his "Money and Currency," summarizes the importance of prices very clearly, as follows:

> The level of prices, it should be noticed, is itself of no importance; it does not matter whether prices are high or low, if there is perfect adjustment between prices and the supply of money. Whether the value of the dollar shall be much or little, whether prices, in other words, shall be high or low, is of no more consequence than the question of whether the mile shall contain ten thousand or five thou-

sand yards. But changes in the value of a dollar, that is changes in the level of prices, are of the utmost importance, for they are always attended by an irregular re-adjustment of prices. The question of high and low prices is entirely different from the question of rising and falling prices.

When prices are rising with more or less steadiness the monetary standard is called a "depreciating" standard; when they are falling the standard is said to be "appreciating," growing more valuable. Economists have generally held that the effects of a depreciating standard, if the rise of prices is not too pronounced, are less harmful than the effects of an appreciating standard. We have already in the preceding chapter had occasion to call attention to the remarkable stimulus to industry which follows from a steady and continuous rise of prices, and to the depressing effect of falling prices.

The disturbing effects of a change in the value of the standard are due to four circumstances,—(1) the use of credit; (2) the fact that production involves a period of time; (3) the fact that prices do not change uniformly, and (4) the psychology of confidence and depression.

It is evident that if men did not borrow or lend, a change in the level of prices would be less hurtful than it is. In our discussion of the commodity rate of interest it is shown that a change in the price level had a curious effect upon relations between borrower and lender; if the level of prices is rising, the lender receives back in real value much less than he loaned; while if the level of prices is falling, the borrower is obliged to return in real value more than he received. If prices are falling, the borrower, in order to repay the principal, is obliged to sell more goods than he was able to buy with the money when he borrowed it.

A farmer who borrows money when wheat is one dollar a bushel is very much discouraged as the price of the wheat falls, for his ability to pay his debt is steadily diminishing. He is injured as much as if he had borrowed one thousand bushels of wheat and were required to repay the loan in bushels of larger capacity. The farmer's case is no different from that of the

man who borrows money or credit and engages in manufacturing. A certain time must elapse before he can turn the capital over and go into the market with his finished product. If in the meantime a change in the price level has occurred and the price of his product has been lowered, he will take in less money than he expected, his money profits will be small, and his ability to pay his debt will be impaired.

It is incorrect to argue that this entrepreneur and farmer are both just as well off with less money because the value of money has increased. They are not as well off. If prices fell uniformly it would be evident to everybody that the purchasing power of a dollar had increased and that the fall of prices was due not to overproduction in this or that industry but to a change in the value of money, and men might learn to minimize the evil effects of such a change. But the fall is not uniform and is never ascribed by business men to changes in the value of money. Indeed, it is impossible to determine in any given case whether a fall of price is due to a fall of value in a particular good or to a rise in the value of money. The problem is so intricate and so many influences are involved that a complete analysis of the causes in any particular instance cannot easily be made.

Furthermore a fall of prices, since it strikes first this commodity and then that, always catches the entrepreneur unprepared. Inasmuch as the wholesale prices are the first affected, he finds that his cost of living is the same as before; the prices of some of his raw materials have declined, but others have not felt the change; his laboring men insist upon the old rate of wages. He is obliged to sell at a lower rate of prices than his money costs of production were based upon. It will not cheer him to tell him that money has increased in value and that the money he is getting for his goods will on the average buy more than the money he paid out. All his debts are money debts. A definite sum of money is what he needs in order to keep on his feet. The thing he is interested in is prices, not values, and the inexplicable turn which prices have taken threaten him with ruin.

The psychological effects of a change in the price level are of the utmost importance. Very few men who engage in business or industry know with certainty what their profits are going to be. The production of wealth is always attended with risk. Men assume this risk, sometimes boldly, sometimes timidly. If times are considered good and the prices of conspicuous articles are rising, there is a general feeling of confidence that business ventures can safely be undertaken, and men engage freely in production. As a result of this confidence there is a larger production of wealth and the average purchasing power of every member of the community is increased. The industrial millenium would be reached if only this production could always be wisely directed; that is to say, if men could always gauge the wants of their customers, if producers could foresee changes in the popular tastes and vary their productions accordingly, for then the condition commonly described as overproduction would never ensue. The ability of people to buy would grow as the supply of goods increased. Unfortunately, however, it is impossible to gauge changes in the demand for goods, and industrial mistakes will doubtless continue to be made and to bring about the recurring periods of prosperity and hard times. But of the effect which the mental condition, the hopefulness, of a people has upon their productivity there can be no doubt. The business man is always discouraged by any loss which he cannot understand or explain, and his discouragement is communicated like a contagious disease to others. Likewise he is greatly stimulated by unexpected profits, and his new confidence is also contagious, stimulating his neighbors to enterprise.

Here we find perhaps the worse effects of a gradual fall of prices. Men do not and probably never will thoroughly understand the relation between money and goods. To them money is a thing of fixed and changeless value; goods are what they make and sell, and changes in prices are always attributed to changes in the demand for or supply of goods. As a result, when a rising demand for money is not met by an increased supply, and the prices of commodities here and there begin to weaken business men are unable to explain the phenomenon and

are puzzled and distressed. The practical man usually attributes such a fall in prices to excessive competition and overproduction. During the last twenty-five years of the nineteenth century these two phrases were in everybody's mouth in explanation of the heavy prices and vanishing profits of that period; and many a young man was advised to keep out of business and enter one of the professions on the ground that business was "overdone."

119. *The making of prices.*—Upon what do prices depend? By this we have to understand particular prices, not general or average prices. We are concerned with the prices of flour, wheat, wool, meat and eggs. What influences the quantity of money for which these commodities in suitable units and denominations will be exchanged? To answer this question it is advisable to see the price-making process as it actually goes on in the produce exchange.

Every newspaper reader is familiar with the Chicago Board of Trade. Most people have also heard of the New York Cotton Exchange, the Coffee Exchange or New York Produce Exchange. Every large city in the United States has one or more of these exchanges, which are places where buyers and sellers can come together and where prices are made.

The Chicago Board of Trade, for example, is a voluntary association whose primary object is to afford a place for dealing in grain and other provisions. Its members are called brokers. They may buy and sell for themselves, but as a rule they buy and sell for others, sometimes their employers, sometimes outsiders who employ them for particular transactions. The members of the board of trade are constantly engaged in buying and selling on the most favorable terms that can be secured. In order to do this, they are constantly engaged in fore-

casting the forces causing the prices of wheat, corn, oats, pork and other staple food products to rise or fall.

They must scan the newspapers with constant care for the latest news of disturbance or prosperity throughout the world. In addition they watch the news ticker service which tells them of any important happening within a few minutes—sometimes seconds—after its occurrence. Their private advices as to weather, crop conditions, and the like, keep flowing in.

The wheat market of the Chicago Board of Trade on Monday, March 24, 1913, was described as follows in the *New York Commercial:*

> While the tone in wheat was generally steady, trade was limited, mostly the result of the poor wire service which interfered with news dispatches and the forwarding of orders. The principal factor was the reports of severe wind storms at many points in the winter wheat belt, particularly west of the Mississippi River. This did not have much influence, however, for while snow covering is not heavy the belief was that the crop has not advanced far enough to be damaged by wind storms. Another important factor was the advance of nearly two cents a bushel at Buenos Aires at the opening. This was due to unfavorable weather for the movement and an improved foreign demand. The cash and export demand here continues limited. European markets were generally closed owing to the Easter holidays. Weekly statistics, however, were about as expected.

120. *Factors which influence price.*—What are the factors which here appear to influence the prices of grain? We may consider them (1) under the head of supply and (2) under the head of demand. In discussing supply we should remember that everything that is produced will be eventually sold, that is to say, it is all destined for the market. The factors that the broker takes into account in estimating the supply of wheat are: (1) the visible supply, the amount of

wheat in elevators and in transit between this country and Europe and between grain fields and the various centers; (2) the stock of wheat in local elevators and in farmers' hands; (3) the size of the growing crop. Estimates are to be had at regular intervals by the Department of Agriculture giving the condition of wheat in different parts of the country. From these reports, which are generally quite accurate, the experts on the board of trade calculate with surprising exactness the size of the crop in a given locality. These reports are published from time to time, and with them the estimates of the prospective yield. (4) Any current news may influence the supply which indicates either an increase or a diminution in the amount of wheat for sale; for example, war news or rumors of a decline in ocean rates, due to competition, or an increase or diminution of the German tariff on grain, would all have an influence upon the estimates of supply. (5) The condition of the money market has an important bearing upon the future supply. Business in the United States is, as we have seen, very largely transacted on borrowed money. Particularly is this true with the staple commodities. Aside from the great army of speculators who buy grain or cotton with a small proportion of their own money, and who have a large proportion of the purchase price borrowed for them from the banks by brokers who give the warehouse receipts for the grain purchased as security, there are the large manufacturers and dealers who borrow money to hold or "carry" stocks of commodities for current needs or for future requirements. If money rates are low, and if loans are readily made on proper security, the amount of this buying with borrowed money is increased. If, on the other hand, the banks are reluctant to loan, and if they feel that

they have sold more promises to pay than it will be convenient for them to meet, they may refuse to lend, except to a few favored borrowers, and may also refuse to extend these loans that they have already made. A large amount of bank loans are also made on "call," that is to say, the bank reserves the right to demand payment at any time. If a condition of the money market arises in which banks are refusing to make or renew loans, and are calling loans already made, the effect is instantly to increase the supply offered upon the market of those commodities which are being carried with borrowed money.

A man borrows for two reasons: Either to buy or to keep from selling. If borrowing is made difficult or if rates of interest are raised, bids to purchase at a given price level are diminished and offers to sell are increased. A most important element, therefore, of the daily calculations of a produce broker is the condition of the money market.

121. *Factors influencing demand.*—Passing now to the forces of influencing demand, we have: (1) An increase or decrease in the supply of other grains, such as corn, oats or rye, which may be substituted for wheat. A decrease in the corn crop means that there will be an increased consumption of wheat for some of the purposes to which corn would otherwise be applied. A fluctuation in the yield of the substitutes for wheat has, therefore, a most important influence upon the demand for that grain. (2) The demand for wheat is influenced by any change in the money market which governs the amount or rate of bank loans. We have already discussed this factor and understand its influence. When loans are curtailed, or when the rate of interest rises, buying is instantly and certainly diminished,

that is to say, the demand for grain weakens. (3) A change in the purchasing power of the consumers of wheat may have an important influence upon its demand. Wheat is mainly consumed in the form of flour. When employment is abundant and wages are high, more bread is sold and at better prices; on the other hand, during periods of depression, when most people are economizing, the demand for flour is likely to be somewhat weakened. (4) Any change in the consumption habits of the flour buyers that would make flour a less desirable element in their dietary must influence the demand. An example of this is the introduction of corn meal into the dietaries of Western Europe. If the European peasant can be persuaded to substitute corn meal for rye and wheat flour, the demand for wheat and rye may be considerably affected. (5) Any special cause may influence the demand, such as the outbreak of a war, which would increase the consumption of flour for army purposes.

122. *Method of operation of these factors.*—Any one of these causes may operate upon the price of wheat. It is conceivable indeed that all these causes may unite to force prices up or to force them down. Usually, however, these influences pull in different ways. If the crop is short in the United States, it is likely to be large in the Argentine Republic; or a stringency in the money market may force sales sufficiently to offset the effect of rumors of crop failure, or rumors of a European war may coincide with the reports of a large wheat crop. All these forces which have been mentioned and others besides them are constantly in operation, and the price of wheat on any given day is the result of the joint operation of these various influences.

These price-making influences do not actually come

into operation before the price is affected. A large number of dealers, speculators and manufacturers are constantly endeavoring to foresee the operation of these forces, and either to buy or sell, as the prospect of profit directs. Months before the harvest the amount of the harvest has been forecasted. If the crop is to be short, the dealers know that the price of grain will rise, and although the current supply of wheat may not be changed, yet in anticipation of a future diminution in the supply of wheat, the price of wheat is instantly advanced. Competition between dealers will inevitably result in registering the effect of any marked influence upon the price of grain as soon as it is clearly perceived.

Our analysis of the influences which affect the price of grain might be duplicated in the case of every other commodity. In each case, there are the same influences operating to affect the supply and the demand, and in each case the results of the interaction of these influences and forces is a particular price for a particular commodity at a particular time. These prices, moreover, are constantly changing, as, in the estimate of the dealers, one influence or another is most likely to be affected. Nothing is more irregular and unstable than market prices. They fluctuate within narrow limits dozens of times each day, and considerable changes, extending to 15 or 20 per cent, and in the case of such commodities as iron to 100 or 150 per cent, may be accomplished within a year.

We may simply say that under the pressure of an exterior cause—competition—and only where this pressure exists, the cost of production and the value of the product always tend to coincide. This relation is one of the most important in political economy, but it does not by any means indicate the cause of value.

In a word, we must conclude with regard to exchange value, as well as with regard to value in general, that it is fruitless to seek a single cause or basis. The best way out of the difficulty, as Stanley Jevons and M. Vilifredo Pareto have proposed, is to remove the word "value" from the economic vocabulary and substitute the expression "exchange relation." It is indeed only a relation; the causes of this relation are not so important as the conditions which it must fulfill. These conditions may be reduced to two, which together are necessary and sufficient:—

(1) The current price must be such that demand and supply coincide exactly, for it is evident that there cannot be more merchandise sold than bought, nor, inversely, more bought than sold.

(2) The current price must be such that all parties (sellers and buyers), even the least favored, secure a gain in utility. For it is evident that if there is not an advantage of some sort for both parties to an exchange, the transaction will not take place.[1]

123. *Utility to consumer a factor in determining price.*—Although market prices may change and fluctuate in the manner just described, they are, however, in the last analysis, determined by the comparative utility of commodities and money to their consumers. The intending purchaser of a commodity has money. This is valuable to him because it gives him command over every other commodity. He is offered a particular commodity, say flour, at $5 a barrel. He balances the utility of $5 against the utility of the other commodities that $5 represents to him. If flour is indispensable to him, he would rather pay $10 or $20 per barrel than go without it. If, however, as in most cases, the commodity is not indispensable, he may reduce his consumption of flour to a half barrel and buy something else to take its place. This tends to weaken the

[1] Charles Gide, "Principles of Political Economy," Book III, Chapter I, pp. 194, 195.

demand for flour at the price of $5, and if the unwillingness to pay $5 is general, it will in time bring down the price so that the stocks on hand can be disposed of. The upper limit of any price, therefore, is the utility of a given supply of that commodity to the consumer, as compared with the utility of other commodities that money will command. The lower limit is the cost of production of that portion of a given supply which is produced under conditions of the greatest disadvantage. When the point is reached in the decline of any price where a large number of the producers are operating at a loss, they will be unable to continue producing and their retirement from the field of production will curtail the output. Unless their competitors can make up the deficiency, the supply will fall off, and as a result the price will be raised because of the bidding that takes place among buyers for the decreasing output.

A good illustration of the effect of declining prices in reducing production was furnished during the early 90's when the wheat farms of Western Kansas and Nebraska, where wheat growing is uncertain, were abandoned because the price obtained no longer paid the expenses of production. Another illustration was furnished in the autumn of 1893, when the price of silver declined some 40 per cent within a few months. A large number of silver mines throughout the West and in other countries were immediately abandoned, and had it not been for the fact that the demand for silver was permanently reduced, the price would have advanced as a result of the decrease in supply. To repeat, the upper limit of price is the utility of a commodity offered for sale as compared with the utility of money which represents all other commodities. The

lower limit is the cost of production of a sufficient amount of the commodity to influence the supply on the market. The actual price usually lies somewhere between these two extremes.

124. *Price fluctuations and their cause.*—One of the most interesting phenomena of modern times has been the extensive changes that have taken place in prices. Beginning with 1850, prices of all commodities all over the world rose until 1873. From that time until the period of 1893–96 prices moved with few interruptions steadily downward and declined almost 50 per cent from their maximum figures, which were reached in 1873. Since 1896 the movement of prices has been upward. The primary cause of these extensive fluctuations in prices was a progressive and long-continued alteration in the relations between the amount of the medium of exchange, composed of money and credit, as we have already described, and the amount of commodities offered for sale. The production of gold for many years after 1873, owing to certain peculiar difficulties attaching to that industry, failed to increase on the same scale as the production of wheat, iron, coal and other commodities. Owing to the fact that the production of gold limits the amount of promises to pay gold and the amount of credit that can be issued by the government and banks to serve as the medium of exchange, the result of this relative decline in the production of gold was that the commodities that were exchanged for money increased more rapidly than the supply of the medium of exchange. In consequence we experienced a prolonged and severe fall of prices from 1873 to 1896. This fall of prices was more disastrous because it followed twenty-three years of rising prices from 1850 to 1873. During this period the produc-

tion of gold increased more rapidly than the production of the commodities that were exchanged for money. As a result of the increase in the production of gold, the supply of all kinds of promises to pay gold increased with great rapidity, and the medium of exchange was largely expanded. The consequence was that the value of money, measured in terms of the commodities for which money was exchanged, rapidly declined. In other words, prices rapidly advanced. From 1896 to 1913 again, as a result of the rapid increase in the production of gold, the movement in the medium of exchange has overtaken and passed the increase in the production of commodities, and we have seen again the phenomenon of rising prices that we experienced from 1850 to 1873.

These prolonged changes in prices affecting all commodities in the same direction, although not of course to the same extent, are likely to be experienced so long as business is transacted. Since all commodities are produced to be exchanged for the medium of exchange, and since the primary use of the standard metal is to be exchanged against commodities, the value of money in terms of commodities and the value of commodities in terms of money will continue to be influenced in the long run by their relative supplies. First, the production of gold, and then the production of commodities will increase the more rapidly, and prices will rise or fall to correspond. A price movement requires a number of years for its completion but what the business man is primarily concerned with is the weekly, monthly and yearly movement of prices, and it is with these movements that we have chiefly concerned ourselves.

CHAPTER VI

INTERNATIONAL EXCHANGE

125. *International payments.*—If we take the statistics of merchandise exports and imports of the United States for the ten years ending with 1912, we find that they amount, in the aggregate, to over thirty billions of dollars. This enormous amount of money represents the total purchases and sales of the United States. Every one of these transactions was made in terms of money—American dollars, English pounds sterling, French francs, etc.

The only money recognized in international trade is gold. Outside of the country which uses it no form of token or representative money or bank notes passes current. These vast transactions were, therefore, expressed in terms of gold. Since they represented bona fide sales for which purchasers were obliged to pay, and since they were between citizens of the United States and citizens of other countries, we would naturally expect to find a large movement of gold exported and imported in settlement.

On examining the statistics of the exports and imports of gold, however, we find that their total amount during this period was only $1,540,000,000, or about one-twentieth of the total purchases and sales. It is evident that these enormous transactions were settled in some other way than by the shipment of gold coin and bullion back and forth across the ocean. The man-

ner in which this settlement is made we shall consider under the head of the International Exchanges.

126. *Domestic exchange.*—Let us begin our discussion by examining the situation in local exchange. We have already seen that different cities and localities are specialized to the production of particular commodities. For example, Fall River, Massachusetts, is almost entirely devoted to the production of cotton goods; Kansas City, Missouri, is a centre of the meat and grain industries; Pittsburgh specializes in iron and steel. We may, without departing too far from reality, speak of Fall River as a cotton city, Pittsburgh as a steel city and Kansas City as a meat and grain city. The other industries carried on in these several communities are, compared with their leading activity, unimportant. The people of each of these cities buy everything which is produced; all kinds of commodities ready for the consumer, as well as enormous quantities of raw material and machinery. Each of these cities, in other words, draws upon the whole world to supply its demands, importing every year from every part of the world thousands of commodities. How are these commodities paid for?

Our study of the deposit currency supplies us the answer. The Fall River mills are continually selling cotton cloth to all parts of the world; Pittsburgh is selling iron and steel; Kansas City grain and meat. These commodities are paid for by checks, drafts, bills of exchange, which are deposited in the banks of these three cities, and the proceeds collected in the regular way. Out of these bank deposits is paid, directly or indirectly, all the indebtedness of the business men of Fall River, Pittsburgh and Kansas City to the people

who work for them and who sell them goods, and so these deposits furnish the inhabitants of these cities with the means of paying for all the commodities which are imported for their use. These payments are made by checks and drafts drawn on the deposits in the banks of these cities. They may be deposited in the bank by manufacturers and dealers who have sold cotton cloth, steel, grain or meat, to purchasers residing in all parts of the world, or by store keepers and other local business men who, as we have already seen, have received payment out of the money which the manufacturers and dealers have paid out, and which has been taken from their deposits in the banks. These deposits originated in the sale of cotton cloth, steel, grain and meat. We reach then the conclusion that Fall River pays for all her imports with the cotton cloth which her manufacturers export; that the steel exports of Pittsburgh pay for all the commodities shipped into that city, and that the grain and meat which Kansas City is constantly exporting serves to furnish the means of payment for all the imports into Kansas City.

127. *A similar method employed in the international exchanges.*—If the steps leading up to this conclusion are clear, it will not be difficult to understand the process of liquidating the various obligations which arise in the course of international exchange without the shipment of more than a small percentage of the money which these transactions represent. If the explanation of the process of domestic exchange has been understood, we can understand why the United States can, within ten years, do thirty billion dollars of international business while exporting and importing only $1,540,000,000 of gold.

The explanation is briefly this: the United States pays for her imports with her exports. This transaction is accomplished in almost exactly the same method as that which is employed in the settlement of internal obligations. The leading exports from the United States are food-stuffs, cotton, manufactured commodities, mainly iron and steel, petroleum and lumber. The leading imports are sugar, coffee, india rubber, wool, hides and a great variety of products ready for consumption. Every sale of wheat or cotton by an American exporter entitles the exporter to receive a certain amount of money in the country to which the shipment goes. Every purchase by an American importer obligates the importer to pay a certain sum of money in the country in which he has made his purchase. The exporter, therefore, since he has the right to receive money in Liverpool, draws a draft on the English purchaser of the grain, instructing him to pay to the person named in the draft, say £1,000 ($4,886). He takes this draft to a banker who has a correspondent or a branch in Great Britain, and after endorsing it and attaching the invoice, bill of lading and the marine insurance policy, he sells it to the banker who charges him a small amount for the service. He pays him the $4,886 (£1,000) to which he is entitled in Liverpool, less a small amount as his profit. In this way the exporter is receiving his money immediately, when in the absence of some such arrangement he would be obliged to wait for the delivery of the goods and the shipment to him by his Liverpool debtor of the amount of his purchase price in gold. The banker who has paid this bill sends it abroad to his English correspondent, who presents it to the purchaser of the grain for payment. When the bill is paid the proceeds are de-

posited in England to the credit of the American banker.

128. *Essential elements of the transaction.*—Now observe how this export of grain is utilized to pay for an importation. At the same time that the banker has purchased from the exporter of grain the right to receive £1,000 in Liverpool as the purchase price of the grain, the American importer of cloth has agreed to pay in Liverpool the same amount, £1,000. He can pay this in one of two ways: either by drawing from his bank the amount of gold represented by his debt and shipping this on a fast steamer at a cost of about 2.43 cents for each $4.86 which he sends, or he can buy from an international banker the right to receive £1,000 in England, expressed in the form of a draft by the banker on his English correspondent, and he can send this draft to his English creditor, who will collect it from the banker on whom it was drawn and obtain his money. The second method is almost invariably chosen. The American banker has a credit with his English correspondent as a result of the collection of the bill of exchange drawn against the export of grain for £1,000. He is, therefore, in a position to sell, of course, at a profit to himself, a bill against that correspondent. This is purchased by the American importer of cloth, who straightway sends it through the mail to the Englishman from whom he has made his purchase. The English exporter, as soon as he receives the bill, deposits it with his own bank to be collected from the bank on which it was drawn. Therefore the export of grain paid for the import of cloth and no money passed between the two countries in a transaction involving approximately $10,000.

129. *International exchange an offsetting of credits.*

—It is in this manner that international indebtedness is settled. Those who have rights to receive money in England, France and Germany and in every country with which the United States has dealings, sell these rights to receive money to international bankers. The drafts so purchased by the bankers are sent abroad to their correspondents for collection and the proceeds are deposited to their credit. All those Americans who have money to pay abroad for any reason obtain the means of payment from these same international bankers who sell them drafts upon their foreign correspondents entitling them, when the drafts are presented, to receive money in the currency of the country where they have payments to make. It is with these drafts that foreign payments are made.

There is no essential difference, then, between the method of settling foreign transactions and those which are employed in domestic business. Every city in the United States pays for what it consumes by checks and drafts drawn against deposits in its banks, which deposits have originated in the sale of commodities which it has exported. So every country in its dealings with the outside world settles its obligations by drafts against credits, which originate for the most part in shipments of merchandise, and as in domestic transactions, it is only the balance which remains after offsetting the credits of a city against its debits which is sent to it or received from it in actual currency, so in international transactions, the exports and imports of gold are small because they represent merely the amount of international indebtedness which is not balanced by international credits.

130. *Other sources of bills of exchange.*—Up to this point in our discussion of international payments, we

have assumed that these originate in the sales of commodities. There are, however, many other sources of United States indebtedness to the world and of the world's indebtedness to the United States. Americans every year in foreign travel spend from a hundred to a hundred and fifty million dollars. Their expense must be paid by the purchase of bills of exchange in the United States drawn against American credits in Europe. American corporations have obtained large amounts of money to invest in various enterprises from European investors. The interest on these European investments in the United States amounts to a large sum which must be paid by the purchase of drafts in the United States.

Again, nearly all the foreign trade of the United States is carried on by vessels which are owned by foreign countries. The freight charges on our foreign trade, therefore, must be paid abroad, and these payments are made in the same manner by the purchase of bills of exchange in the United States. As a result of these payments which are made in addition to the obligations incurred on account of the purchase of foreign merchandise, it is necessary for the United States to export a much greater value in commodities than is imported. Europeans do not travel largely in the United States. The American Merchant Marine performs few services for Europe, and American investments in Europe are trifling. We have, therefore, to receive very little money on these accounts, while our payments for these purchases are enormous.

131. *A large surplus of commodities must be exported.*—It is necessary, therefore, that the United States should export commodities sufficient in value,

not merely to balance the importations of foreign merchandise, but also to give to the bankers of this country, credits against which they can sell bills of exchange in sufficient amount to meet the expense of American travel in Europe, interest and dividends paid to foreigners and a large part of the charges on American foreign trade. We find this conclusion borne out by the statistics of our foreign trade. From 1903 to 1912, the period previously examined, the excess of exports over imports, gold shipments being included, was $4,405,228,401, which was approximately the amount of foreign obligations due to Americans in excess of the amount of their indebtedness on account of merchandise purchased from foreign countries. This difference between exports and imports is found in the foreign trade statistics of every country. In England, for example, the balance is in favor of imports. England has enormous investments in foreign countries and the interest and dividends on these investments must be sent to her in the form of bills of exchange drawn against importations of merchandise into England, from which the countries who send them will receive no other payment than the discharge of their obligations incurred on account of interest, dividends and carrying charges.

132. *The international income account.*—On the basis of the foregoing discussion it will be possible to understand what is known as the international income account, which should be headed "The United States in Account with Foreign Countries." This account takes into consideration not only the imports and exports of merchandise and gold, but also all other transactions giving rise to debts between nations, as follows:

DEBIT.	CREDIT.
Imports of merchandise	Exports of merchandise.
Payments of interest and dividends on American bonds and stocks held in Europe.	Payments of interest and dividends on European securities owned by Americans.
Freight and passenger charges paid to foreign vessel owners.	Expenses of European travel in the United States.
Expenses of American travel in Europe.	Loans made to bankers and others in the United States.
Payment of foreign loans.	Purchase of American securities.
Purchase of foreign securities.	Remittances to immigrants in the United States.
Remittances by European immigrants into the United States to their friends left at home.	

On the debit side of this account appears all the payments which citizens of the United States are obligated to make to citizens of foreign countries, grouped under their leading classes. On the credit side appears a classified description of the payments which citizens of the foreign countries are obligated to make to citizens of the United States. The leading items have already been mentioned, but we will repeat them in a brief explanation of this statement. On the debit side there are imports of merchandise, payments of interest and dividends on American stocks and bonds held in Europe; freight and passenger charges paid to foreign vessel owners, and expenses of American travel, the payment of foreign loans, purchase of foreign securities and remittances by European immigrants into the United States to their friends left at home. Obligations under each one of these heads must also be discharged by the purchase of bills of exchange drawn against credits established by American bankers abroad.

An interesting portion of the study of foreign exchange concerns the causes which influence the prices of foreign bills. These causes are described by Lord Goschen in his "Foreign Exchanges," as follows:

When the foreign exchanges are in actual operation, and adjustments of accounts are taking place between different countries, it appears at once that, though the purchase and sale of foreign bills originally represent a simple transfer of debt, and thus, at first sight seem to exclude the idea of varying prices, the value of these bills is, nevertheless, in a state of constant fluctuation. The enumeration of the various elements of value which determine these differences in price forms the next step in our inquiry, and is rendered possible by the fact that, while every instance of such variations admits of a special practical explanation, all are, nevertheless, subject to well defined general laws, and capable of scientific analysis.

The primary difference of value clearly arises, as was previously pointed out, either from the aggregate amount of the claims of any given country upon others exceeding the sum of its liabilities to them, or, vice versa, falling short of that sum. In the first case, those who have bills to draw (whom for the sake of conciseness we will call the exporters, though the class embraces all those who have claims of any kind on foreign countries) will not find sufficient purchasers to take all their bills; for only those will buy who have debts abroad to settle, and these debts are by our hypothesis of less amount than the claims. Accordingly the exporters, competing with each other for the sale of the bills, will take less money for them than their nominal par value; that is to say, will sell them at a discount. In the second case, the importing class, those who have incurred liabilities to foreigners, having, by our hypothesis, larger remittances to make than the exporters can supply to them, bid against each other for such bills as may be got, and pay a premium to secure them. In both cases, what exporters and importers are seeking to avoid is the transmission of bullion, with all the sacrifices thereby entailed, and accordingly the extent of the premium or discount which can be given is determined by the extent of these sacrifices. Let us suppose that importers foresee that the bills which they will be able to procure, will not suffice for all the payments which they have to make. They at once become aware that the balance will have to be remitted

in bullion; and each individual, to avoid this necessity falling to his share, hastens to offer a slight premium to those who draw, intending by this small sacrifice to secure himself against the greater loss in freight, insurance and interest, which is always involved, in the remittance of bullion. The premium may rise to within a fraction of this expense or loss; nay, may even reach that actual point; because though the premium be paid for the bill and the cost of specie remittance were absolutely equal, it would still be more convenient to send the bill. Beyond this point the balance of trade cannot cause the premium to rise, nor on the other hand, can it cause the discount at which bills are sold to exceed the sacrifices which exporters would incur, if they found themselves obliged to instruct their foreign debtors to send them bullion, in consequence of bills upon them no longer being saleable. The time, however, when they would receive payment would, in this case, be an important consideration. As long as the exporters can find purchasers for their bills, they get payment at once; but when they cannot dispose of their bills anymore, they are not reimbursed for the value of their exports till the equivalent for them is returned in gold. Accordingly each individual will submit to a sacrifice in order to sell his bills before the demand for them is exhausted, but the discount will not be greater than the estimate which the seller makes of the sacrifices which have been pointed out. The result becomes perfectly clear when stated in actual figures, especially if an illustration can be found where the par value of the bills drawn between two commercial centers is not hidden or rendered more complicated by differences of currency. New Orleans and New York, before the secession, when their respective currencies had not been disturbed and divided by independent issues of inconvertible paper money, supplied an instance in point. Under the hypothesis of an identical currency, if at any time the amount of bills on New York offered for sale in New Orleans equalled the amount of remittances required for the payment of debts due to New York—that is to say, if the indebtedness of the two cities reached a point of equilibrium—the price to be paid for a bill for one hundred dollars payable

in New York at sight (for differences in point of time, and consequently interest, should at this stage be eliminated), would be exactly one hundred dollars. In proportion, however, as it might become evident, that a greater sum was due New York than could be drawn against the claims of New Orleans upon that city, those who were bound to remit would hasten to pay a small premium to the drawers, and give them one hundred dollars and a half, under the apprehension that if they did not secure these bills, they might be obliged to send gold, which might cost them one and a half dollar for each one hundred dollars in freight and insurance. Thus the more clearly it appeared that the stock of bills was growing insufficient, and the more the supply actually diminished—the higher the premium was sure to rise, till the sellers might realize almost one and a half dollar profit. At this point the profit was clearly so high, that it would be indifferent to the remitters whether they bought bills or sent the gold, and some would dispatch gold and others would send bills, the surplus excess required to be remitted being in the meantime gradually lessened by this dispatch of gold. The exporters being less pressed for their bills, soon had the opportunity of feeling the change in the situation, and might content themselves with a smaller premium in order to secure some profit before the demand was entirely satisfied. The result would be a fall in the price of bills, till the exchange stood once more at par, or below it. Conversely, if at any time there were more bills than purchasers for them, the drawers feeling that their export business might have to bear the charge of one and a half per cent for bullion shipped to them from New York as returns, were ready to sell at a discount long before that point was reached; a discount would, however, not exceed the charges on bullion shipments, which, in the case in point, we have supposed to be one and a half per cent. It is a clear deduction from these considerations, that the limits within which the exchanges may vary (provided the bills are drawn at sight and in the same currency), are, at the one extreme, the par value plus the cost of transmission of bullion; at the other extreme, the par value minus this identical sum. Practically

the exchanges rarely touch either extreme, but fluctuate between them, owing to the various measures and influences brought to bear upon the situation before the extreme case arrives, which cause a reaction in the opposite direction.

PART III: DISTRIBUTION

CHAPTER I

FORMS OF OWNERSHIP

133. *Four interests in every business.*—The three factors in production—natural agents, labor and capital—were originally, in a primitive state of society, united under the control of single producers. Even to-day we find numerous examples of this union. The farmer and the blacksmith unite the three factors of production, and a large number of small manufacturers and traders do the same. When industry is conducted on a large scale, however, as modern industry almost universally is, the ownership of the factors in production is separated. One man owns the land on which the factory is erected; another man furnishes the funds to build and equip the plant and to finance its operation. The labor is supplied by a third set of men, and the owners of the business, who take the risks and receive the profits, constitute the fourth. These four interests are found in every large business.

134. *The entrepreneur.*—We find that the conduct of production is to-day in charge of business management called entrepreneurs. The English equivalent of this word is undertaker. The entrepreneur is the man who undertakes the conduct and the responsibility of production. These men buy or hire land or natural resources, they employ labor and they use either their own funds or the funds that they borrow to erect and equip build-

ings, buy materials and operate their farms, factories, shops or mines. They own the product and they sell this on the best terms obtainable, thus replenishing their funds which are constantly being invested in wheat, cotton cloth, pig iron, coal and wages, in order to carry on the productive process. The entrepreneur assumes all the risks of being able to sell his product at a price exceeding the cost of production. He determines what goods shall be produced, in what quantities and at what places. Through his hands, every other member of the community, from the richest bondholder to the poorest laborer, receives his income. The entrepreneur, in other words, although he is working for his own profit, distributes the income of society, and it is from his standpoint that we must consider the operation of distribution.

135. *Three forms of entrepreneur.*—There are three forms, in the eyes of the law, which the entrepreneur may assume. First, the individual; second, the partnership, and third, the corporation. Everyone can call to mind some very large individual owners. John Wanamaker of Philadelphia, and the late Marshall Field of Chicago, are conspicuous illustrations of great business responsibilities largely assumed by single owners. There are two reasons why individual ownership is undesirable. One of these reasons is that the credit of the concern is always higher in a partnership than in the case of an individual owner, and the other is the necessity that there shall be a number of partners as the business grows so that they can constitute an organization and give undivided attention to various departments of the business in a way a single individual cannot.

136. *The partnership.*—A partnership is formed by

the association of two or more persons for carrying on business, and dividing profits between them. The members of the partnership are called partners and the partners constitute the firm. Partnership is the result of an executed contract between the members. This contract may be either written or oral. Of course, if oral, it must be substantiated by evidence. The written agreement is known as the articles of copartnership. It is usually arranged under the following general heads: First, the name of the partners; second, what the capital shall consist of and the respective contributions; third, the definition of the objects and purposes of the partnership; fourth, the right of each one to draw out certain sums for his own expenses; fifth, the bookkeeping and accounting; sixth, any special permissions or prohibitions such as not allowing either partner to make or endorse accommodation paper.

137. *Kinds of partners.*—There are various kinds of partners; first, the public or open partner; second, the secret partner; third, the nominal partner; fourth, the silent partner, and fifth, the special partner. These distinctions are very vital to the partners, but they amount to little as between the partners and the public. The general rule is that the liability of a partner is absolute, if you can get at him. The definition of a partner is anyone who has an intention to share in the profits and losses of a business. He is a party to the contract, he has a voice in the direction and control of the business, and he is the one who invests his capital and labor in the undertakings.

A partner has certain rights; they are, first, the right of choosing his associates. A result of that general rule is that an interest in a partnership cannot be purchased by an outsider without the consent of all the

partners. Second, he has the right to participate in the management of the business. Third, he has the right to sell any part of the property which is kept for the purposes of the partnership, but he has no right to sell any property which is not intended to be sold.

A public partner is one whom the public recognizes as a partner in the concern to be responsible for its conduct and liable for its debts. A secret partner is one whom no one knows anything about. He conceals his identity; therefore, he does not become liable, for nobody knows who he is. A nominal partner is one who allows others to use his name for the sake of the standing it will give the concern. A silent partner is a man interested in the concern, but not active in it. In some states he is free from liability. A special partner is a partner interested in the firm only to a limited amount.

The capital of the partnership is usually considered to be the amounts contributed to the common fund, and the right of either partner is not to any special part of the capital, but to share in the proceeds of the whole after the firm's debts are paid. Good-will may be defined as the benefit arising from the reputation of a firm. The good-will of a partnership, individual or corporation, is embodied in the name of the business. The good-will is in the name, and for that reason the name of a partnership or corporation is carefully safeguarded by the law, and another firm of individuals is not allowed to appropriate the name of an existing business.

138. *Obligations of partners.*—The first and most important obligation which one partner owes the other partners is good faith, for every partner is to a large extent at the mercy of every other partner. Each part-

ner is also chargeable with loss arising through his own negligence, but not for any losses resulting from an honest mistake in judgment. Each partner is also liable for all the debts of the partnership.

The limitations of a partner's authority are as follows: He has authority to bind the firm by contract within the scope of the partnership business. All partners are liable for fraud committed by any one of them. It is held further that notice to one partner is notice to all the other partners.

In proceedings against a partnership, it is not looked upon as a unit, but as a collection of individuals. So, as a general thing, proceedings against partnerships are carried in the various individuals' names and not in the firm name. It very often happens, also, that in cases of dissolution of a partnership, a conflict arises between the partnership creditors and the individual creditors. In this case the individual creditor has to give way. If something remains after the debts of the partnership are settled, it can be applied to the debts of the individuals.

139. *Duration and dissolution of partnerships.*—The duration of a partnership is usually limited by the articles of copartnership, but it may be dissolved in a number of different ways. First, by a provision in the articles; second, by mutual consent; third, by the act of one or more of the partners; fourth, by a change in the partnership; fifth, by death of a partner; sixth, by decree of a court of equity; seventh, by bankruptcy.

The first and second methods of dissolution do not require any discussion. The third method is by the act of one or more of the partners. For example, when one partner makes an assignment, he becomes unable to fulfill his duties as a partner, and therefore

the partnership is dissolved by his act. Fourth, by a change in the membership; when a partner withdraws or transfers his interest a dissolution may be effected. Fifth, by death; the interest of the partner dying descends to his heirs, and as the surviving partners have the right to choose their associates, the death of one of the original partners may result in the dissolution of the partnership. Sixth, by decree of court; in case of fraud or gross mismanagement the partnership may be dissolved by decree of the court. And, finally, by bankruptcy.

140. *The corporation.*—This is a legally constituted association of individuals authorized by law to conduct business through their elected representatives, who are known as directors. The corporation may sue and be sued, may contract debt, and may conduct its business in any way that its directors please within the limits prescribed in the grant of authority issued by the state, which is known as the charter. These charters may be perpetual, but are usually granted for a limited term of years.

The directors elect the officers of the corporation, who attend to its management and who report to the directors. The directors in turn report to the stockholders. If the directors are dissatisfied with the management, they may change the officers of the company, and if the stockholders are dissatisfied with the directors' administration, they may, at any annual meeting, or at a meeting specially called for the purpose, choose other directors in their places.

141. *Advantages of the corporation.*—The advantages of the corporation are great. It enjoys perpetual existence; that is to say, it is not disturbed by the death of any stockholder. In this it is superior

to the partnership. The liability of the stockholder is limited, as a rule, to the money he has invested in the corporation. Every partner, on the other hand, is liable to the amount of all his property, wherever it may be located, for the debts of the partnership. The third main advantage of the corporation is its representative government. The stockholders can elect their representatives, the directors, in the same manner as the voter elects the members of the legislature. They can also call their representatives to account at any time and in this way can insure that the business is conducted according to their wishes.

The control in corporate affairs goes by a majority of the shares of ownership, which are known as shares of stock. Thus a corporation may have a capital stock of $500,000 and if its shares are $100 par value, there will be 5,000 shares outstanding. Each one of these shares represents 1/5000th part of the ownership in the corporation, and the holder of each share is entitled to 1/5000th part of any profits which the directors may decide to distribute to the owners. Thus there may be 10,000 men owning a minority of stock and one man owning one more than half the total number of shares, and this man can name the directors and manage the corporation as seems to him good. It might be supposed that under such a system, the minority stockholders would often be treated with great injustice, and this has sometimes happened. Generally speaking, however, no such trouble is experienced and the ownership of most corporations is, moreover, so widely distributed as to make it extremely difficult for one man to obtain control.

142. *Limited liability.*—The most important advantage of the corporation arises from its limited liability

feature. A man can be interested in a number of industries organized under the corporate form, and can still give his undivided attention to a single business without either endangering the solvency of that business by his outside interests, or making any particular demands upon his time. His liability in each case, as we have seen, is limited to his interest in the property of the corporation. As a result, the corporation can draw its funds from widely different sources, and by uniting the contributions of thousands of individuals can accomplish results which would be impossible for an individual or a partnership to achieve. The Pennsylvania Railroad Company, for example, has 75,000 stockholders scattered all over the world. Within the last ten years this corporation raised three hundred millions of money, a large part of it by selling shares of stock. It would have been impossible to raise this money under another form of organization.

Nearly every large business in the United States is now conducted by corporations. All the railroads, public service corporations, steamship lines and mining industries are so conducted, and most manufacturing enterprises are organized under the same form. Partnership prevails among smaller manufacturers and small merchants, but even in these fields the corporation is coming to supersede the partnership.[1]

143. *Industrial income—distribution of.*—Let us now follow the entrepreneur in the conduct of his business and see how the gross earnings of the business are apportioned or distributed. In order that we may see exactly what this process of distribution is, a statement of the receipts and expenditures of the Philadelphia

[1] For further details with regard to partnerships and corporations, see the volumes on COMMERCIAL LAW AND CORPORATION FINANCE.

and Reading Coal and Iron Company—a corporation controlling over 100,000 acres of coal land in Eastern Pennsylvania, and operating forty-seven collieries—is inserted.

THE PHILADELPHIA AND READING COAL AND IRON COMPANY.

Income	Amount	Total
Coal sales	$35,207,229.38	
Coal rents	248,717.75	
House and land rents	131,072.52	
Interest and dividends	116,283.83	
Miscellaneous	30,349.37	
Total receipts		$35,733,652.85
Expenditures		
Mining and coal repairs	18,382,202.00	
Coal purchased	2,718,374.14	
Royalty of leased collieries	458,522.89	
Transportation and handling	8,135,147.50	
Taxes on coal lands and improvements	589,728.97	
Improvements at collieries, etc.	839,742.00	
Improvements and repairs of houses	32,862.10	
Damages account coal dirt	6,309.10	
All other expenses	3,449,649.21	
Total expenditures		34,612,537.91
Profit from operation		$1,121,114.94
Taxes and fixed charges	$85,455.38	
Interest on Reading Company loans	864,083.91	
		949,539.29
Net profit		$171,575.65
Profit of previous years		1,288,118.49
Balance to credit of Profit and Loss Account		$1,459,694.14

Here is the process of distribution set out in detail. The company receives $35,207,299.38 from the sale of coal and $526,423.47 as income from other sources. This income is now distributed in the following manner: $18,382,202.00 to wages, current repairs and supplies; $8,135,147.50 to transportation charges; $458,522.89 to

rents (royalties); $1,539,268.26 to interest and taxes; $872,604.10 to repairs, improvements and other expenses necessary to make good deterioration of plant and other property; and $6,174,332.45 miscellaneous items not necessary to classify for the present purpose; leaving a net profit for the year of $171,575.65.

We have here illustrated the distribution of the proceeds of industry. The coal and iron company leases the coal land and owns the collieries, conducts the business, mines and sells the coal and receives the proceeds. The sum received does not, however, remain in the possession of the company. Indeed, most of it has been paid out long before the totals on the year's operations have been made up.

144. *Claimants to income.*—This distribution is made, as we have seen, under five general heads: The first expenditure is for the labor necessary in the operation of the mine. The company employs many thousand workmen—superintendents, assistant superintendents, mine bosses, fire bosses, rockmen employed in driving shafts, miners who blast out the coal, inside laborers who break up and load the coal, outside laborers, employed outside the mines, engineers and firemen, drivers, door boys and slate pickers, and a variety of other labor.

The second item is for transportation and is paid to the railroad for hauling the coal to market. This payment is made on the basis of a certain rate per ton, and the rate varies according to the value of the coal. The larger sizes of coal are the most valuable, and therefore pay the highest rate.

The payments for rentals and royalties include the amount paid for the hire of coal land and other property. The fourth item is interest and taxes. These are included together in the statement, but in our discussion we

shall separate them. Interest is paid on the amount of money which has been borrowed at different times in the past for the development of the property, and taxes are paid to the local and state governments. The fifth item—repairs and improvements—appears in the accounts of every business. Unless a large amount is spent in maintaining a plant, it will rapidly deteriorate and eventually become useless. In addition to the expenses for repairs, as we have seen in our discussion of capital, there must also be an amount spent in renewals, because the time comes when a piece of machinery can no longer be repaired and must be replaced. The sixth item of the list is surplus or profits. This is what remains to the owners of the company after paying all claims against it.

Reserving our discussion of taxes for a later page, we have now to consider the four main shares in distribution—wages, rent, interest and profits, and we have to discuss the influences which determine the shares in distribution which go to each of these factors.

CHAPTER II

CLASSES OF WORKERS

145. *The organizer.*—One of America's distinctive contributions to the industrial world is the organizer. To be sure, Europe has her organizers, especially Germany and England and France, but in the number and capacity of its organizers and in their industrial achievements, America far surpasses any other country of the world.

The organizer is the commander-in-chief of his particular industry. It is not his duty to do any of the detail work, either with his hands or his brain. His occupation consists in seeing that the great outlines of the industry as he has planned them, are placed for execution in the hands of competent men. The organizer mobilizes the forces of labor and capital and applies them to the natural resources in a way which will produce the largest return for the smallest outlay. It is the duty of the organizer to superintend only the big things and leave the detail for others. One of the leading men in American industry once said that he never did anything that he could hire some one else to do; in other words, only the big jobs were big enough for his organizing ability, the smaller ones could be taken care of by his subordinates.

It is the duty of the organizer to see that he has efficient forces to execute his ideas. This is one of the characteristics of a successful organizer; it is likewise a characteristic of any other leader of men. He must be

a sufficient reader of character to select subordinates who will see things as he does, and after selecting them he must have sufficient personality to impress his will upon his subordinates. In short, the organizer must, first of all, be a leader of men. He must have the ability to work with and direct others, and get them to do the things as he wishes them done.

146. *Knowledge possessed by the organizer.*—The successful organizer must be more or less intimately acquainted with the details of the various industrial processes which fall under his control, and he must be on the lookout constantly for new processes which will give him an advantage in method over his competitors. One of the leading manufacturers of electrical machinery is particularly noted for his ability to judge of the character and possible outcome of an invention in his line. Not only does he constantly invent himself, but he is careful to keep in touch with all the new inventions pertaining to electricity and to know which of these he needs.

Another thing which the organizer must know intimately is the condition of the markets. Before he places an article before the people and asks them to accept it, he must have some conception of what the public wants. In the first place, he must know what kinds of goods are in demand; and in the second place, he must know where this demand is most active—that is, where prices are highest. In addition to producing cheaply the article which he is manufacturing by an efficient organization of his labor and capital, the organizer must be acquainted with the best means of shipping and disposing of his manufactured products.

147. *Industrial importance of the organizer.*—As already stated, the organizer is peculiarly American,

and to the presence in America of a large group of efficient organizers we owe many things, the most important of which, perhaps, are the examples of large-scale production which have been furnished in the steel, oil and beef industries, and the use of by-products in industry which is an essential feature of large-scale production. This development of large-scale production and the utilization of by-products are so extensive in the large industries of the country, and have so cheapened the cost of producing commodities, that the community is enabled to get many articles of consumption at a price which represents but a fraction of the cost of the same commodity twenty years ago.

The organizer is important in any community of which he may be a part. The community revolves about him and he not uncommonly occupies the position of a feudal baron of the Middle Ages. Indeed, in many parts of the country to-day, the organizer, or the company of which the organizer is the head, will own the factories, the mines, the houses in which the workers live, the stores in which the workers buy their provisions; in short, all of the economic fortunes of the population are controlled by one man or by his company. This unique position of the organizer has led in the past to many abuses which the laws have been seeking for some time to correct. Among these abuses were the company store and the payment of wages in scrip, which could be exchanged for goods only at the company's stores. In this way the money which was paid out in wages to the employés was at once taken back at a profit in the company's stores. Both of these proceedings are now generally illegal.

148. *How the supply of organizers can be increased.* —The organizer has been a distinctive factor in the de-

velopment of our present industrial progress, and as such he is of vital importance to the community. Is it possible for us to insure a continuance of the supply of organizers, and if there is such a possibility, what efforts are we making to incur the continuance of a supply? It is probably fair to say that we have made no intelligent effort along these lines. Our public school system as a whole is calculated to develop school-teachers and clerks rather than captains of industry and only in the last few years have the colleges made any appreciable effort to furnish a course of training that will put a man in a position to assist in the industrial world. In fact, we are still in practically the same position that we occupied fifty years ago, when the organizer rose from the position of office boy, or some similar position, gradually learned the business as he went along, and succeeded in becoming an organizer of industry. Organizers "happen" now as they did then. Granted the importance of the organizer in industry, it would seem that our institutions should be so shaped as to place before the children of each generation an equal opportunity for the kind of an education that will lead to the development of organizing ability in those who possess the aptitude or desire to develop it.

149. *The manager.*—The manager occupies a position in industry analogous to that occupied by the colonel in the army. It is the duty of the organizer to map out plans for carrying on the general business policy of the concern with which he is connected. The manager is the person who executes the plans made by the organizer. It is, therefore, necessary that the manager be in close touch with the details of the business. The organizer may have under his control a dozen cotton mills stretching from Massachusetts to Georgia

He has his office in New York and from it he directs the policy of the whole group of mills, sometimes visiting them, but generally leaving the details of the work at each mill to the discretion of his manager, who has full charge in each locality and is responsible to the organizer only.

To be sure, there are many business operations in the United States in which the same man acts as organizer and manager; but the tendency in modern industry is toward a centrally located office having control over a large number of plants scattered through the country. At the central office is an organizer having charge of the general policy of the corporation. At each of the plants is a manager whose work centres around that one plant. The manager, like the organizer, is of comparatively recent origin. Fifty years ago, in most industries, the head of the industry came in close daily contact with the wage-earners. He called them by their first names and worked with them; but the growth of large-scale production and the concentration of industry in a comparatively few hands have made it impossible for the organizer or business head to know anything of the details of his operations or of his workers. He deals in large projects, leaving to the manager the problems that arise from the detail workings of the plants and the contact with the wage workers.

The manager is the man who sees that the productive machine is kept running. He understands the machinery in his particular branch of industry and he understands the labor market, and he brings the wage worker into contact with the machinery, his object being to secure the greatest possible production from the combination of the wage worker and machinery.

The position of the manager is one not so hard to fill

as that of the organizer. He is not required to initiate new projects nor to outline large operations, but rather to work out and develop the scope of the particular branch of the industry to which he has been assigned. It is not necessary that he should have had so broad a business training, or that he should acquire so extensive a knowledge of men and things as the organizer. What he does need is a highly developed technical knowledge of his line of business, backed by a general knowledge of trade conditions and of the mechanism of production.[1]

150. *The training of managers.*—In America we have developed a high type of manager. Beginning with the public school system, as it has grown up in some of the newer parts of the country, and ending with the technical courses in our colleges, an opportunity is presented for the development of those traits which lead to the growth of a group of successful managers. Until recently, in addition to those opportunities for education, our industries have presented a great opportunity for wage workers to rise from the ranks and become managers, and even organizers under exceptional conditions.

The recent changes in modern industry are unfavorable to the development of additional organizers, but favorable to the development of additional managers. Not only must the organizer of to-day have the ability to group various branches of production, to select his subordinates, and to market his products to the greatest advantage, but he must stand out against large corporations in some lines and monopolies in others, and every year the large corporations become larger and the

[1] The work of the organizer and manager is discussed and illustrated in the volume on ORGANIZATION AND MANAGEMENT.

monopolies more absolute. This means that every year great organizers are forced into the "trust." That is, they go out of business as independent organizers and accept positions as managers under the trust. This trust is controlled by the organizer at its head, who is called a president; a number of vice-presidents, who, in many cases, perform the functions of organizers; and a group of business managers, each one of whom has charge of a particular operation or factory or mill.

151. *The boss.*—Passing now to a discussion of the boss, we come upon one of the most interesting features of the development of labor organization in America. The "bosses" or "foremen" as they are called in the factories, stand in the position of the captains, lieutenants and corporals of a military organization, and in their origin they are typically American.

The boss occupies the same position in our modern system that the overseer did in the slave system. It is his duty to see that none of the men loaf, and that they do their work efficiently. The manager provides the outlines of the work to be done, and the boss sees that the men apply themselves to the work and fill in the outlines. He is responsible for getting the largest amount of labor possible from the group of wage workers under his charge. The immigrant comes over from Europe, ignorant of the language, of the kind of work done, and of the methods used. He is placed under a boss who tells him what to work at and shows him how to work. Then the boss must see that the work is of the necessary standard of quality and of the required amount.

The boss does not use the whip to keep his laborers at work, but he does employ various means which are even more effective. He puts his men on a system of

"piece work"; that is, they are paid so much per piece of the work that they do, instead of so much per hour. For example, a man may solder the bottom to the frame of a lantern at three cents per lantern or thirty cents per hour. If he works by the hour, there is no incentive to work hard, but if by the piece, he will do his best to solder at least ten lanterns an hour, and perhaps eleven or twelve, for each additional one means more in his pay envelope. Then it is tacitly understood that a man must solder ten lanterns an hour or leave. So the piece work system sets a rapid standard and places every incentive before the wage worker to exceed that standard. We shall discuss piece work in detail on a later page.

The pace maker is another means of increasing the product of a gang of workers. The boss selects a strong man and pays him a little more than the wages paid the other men, on condition that this man shall set a rapid pace. He carries so many hods per hour, or wheels so many wheelbarrows per hour, and all of the other workers in the gang are required to keep pace with him or lose their positions. This system, while resulting in a larger production, bears very hard on the weaker members of the "gang." In addition to these two methods, the boss uses talk, sometimes persuasive, sometimes abusive, but always directed toward the one object of getting a large product per man employed.

The manager and the organizer require an extensive experience and great executive ability. The boss requires only the ability to get along with his men and persuade them or compel them to work hard. The Irish made the first bosses, and they are still the typical ones, although Italians and Slavs are now taking positions as bosses over their own countrymen.

152. *Classes of labor in relation to wages.*—Turning

now to the questions that determine the rate of wages, we have first to note the distinction between classes of labor. In the Philadelphia and Reading Coal and Iron Company, we may distinguish five classes of employés: (1) the superintendents and assistant superintendents; (2) the bosses and foremen; (3) the miners and engineers; (4) the laborers and (5) the minor employés. These divisions of employés are found in every business. Under the bosses or foremen, whose functions in industry we have described, come the skilled laborers. The skilled workman is the man who understands the use of certain tools, machinery or processes; a man who possesses, in other words, special knowledge which his employer can utilize to make a profit, and which entitles him to higher pay than common laborers. Illustrations of skilled workmen are machinists, coal miners, dyers, engineers and firemen, carpenters, brick layers, structural iron workers. Before qualifying as a skilled workman in any of these classes an extended period of training and apprenticeship is required, and the special knowledge which a skilled workman possesses represents a large amount of study in the hard school of experience. Indeed, the difference between the skill and capacity of a machinist who may receive $3 a day, and the common helper in a foundry who is glad to work for $1.50 a day, is far greater than indicated by the difference in their wages.

153. *Unskilled labor.*—Below the skilled laborers come two classes of unskilled labor. The first, consisting of those men who are preparing for skilled labor, is represented by the apprentices in every line and also by the men working in employments—like firing a locomotive or helping the coal miner in his work—which are preparatory to skilled work commanding a high wage.

To prepare to fill the position of locomotive engineer, for example, a boy is first put at helping about the roundhouse doing a great deal of hard and dirty work, such as cleaning out fire boxes, etc. He is then made a wiper, and is entrusted with the duty of cleaning up a locomotive for its next run on the road. After a period of service in this capacity, he is put to firing on a freight engine; from here, if he shows ability and commends himself to the favorable attention of his superiors, he is promoted to passenger fireman. After a more extended period of service in this position, he may be sent out as a freight engineer. Finally, if he is sober, industrious, intelligent and careful, he may reach, at the age of thirty-five or forty, the goal of his ambition. the position as engineer in the through passenger service. Below every skilled employment are men who are working just below it preparing themselves to qualify as skilled workmen. These men are usually possessed of some intelligence and they must have a fair common school education. If they are strong and willing, they are certain to be advanced.

The lowest class of labor, known as unskilled laborers, possess little save their physical force. The members of this class are lacking in intelligence, education, foresight and judgment. They can be trusted to execute only the most simple manual tasks, and they can satisfactorily perform these only under the close supervision of foremen. In the service of the leading railroad of the United States it is found necessary to have one foreman for every five common laborers employed. In other words, it pays this corporation to employ one man at $3 a day to supervise and stimulate by precept and example five men who receive $1.25 or $1.50 a day.

CHAPTER III

CAUSES AFFECTING RATE OF WAGES

154. *Real and money wages.*—Wages represent the amount paid for the service of physical or mental labor. The amount of wages is primarily determined by the time during which the service is rendered, as a day, a week, a month or a year. Wages are paid in money and the greater portion of these wages is expended upon commodities. Real wages, therefore, as distinct from money wages, are measured by the amount of commodities that money wages will purchase. They vary inversely with prices. The higher the prices of the necessaries of life, the lower the real wages which a given amount of money wages will procure. This distinction explains, in large measure, the marked differences of wages between city and country, and between the mining camps of the West and the large cities of the East. Every class of employés demands a certain amount of the comforts and necessaries of life, an amount which varies according to the race, education and environment, and if the prices of those necessities and comforts rise, money wages must rise also.

155. *Illustration of distinction between real and money wages.*—The labor situation on the Transvaal affords an excellent illustration of the influence of the prices of the necessities of life upon the real wages of labor. Owing to the necessity of importing practically everything which is consumed in the district, and to the cost of transportation, the cost of living is enormous.

In 1903, the following comparative prices of leading food materials on the Rand and in England were published:

	England.	*Transvaal.*
Bread, four pound loaf	$ .12	$ .36
Milk, quart	.06	.18
Sugar, seven pounds	.26	.52
Eggs, dozen	.20	.92
Potatoes, fourteen pounds	.14	.84
Meat, one pound	.12	.24

The average cost of decent subsistence for a family of five is $122.40. These conditions necessitate high money wages. A mine manager on the Rand will be paid $680 per month; a battery manager $240; machine drillers $160, and carpenters $125. White laborers cannot earn enough wages to permit them to live, so the mines are worked by native labor, Busuto, Zulu and Zambesi blacks, locally known as "boys," who receive from twelve to fifteen dollars per month and their board. They make fairly efficient laborers, but the cost of obtaining them is heavy, and the supply is inadequate. They are constantly deserting to return to their homes, often one thousand miles distant, and enjoy the fruits of their labors, according to the native philosophy of life, which is as follows: "Six pieces of white man's gold will buy one cow, four cows will buy a nice little wife; half a dozen wives will tend my mealie patch while I smoke and look on."

156. *Distinction between fees and wages.*—We must here note the distinction between the fee which is paid to the physician, and the wages or salaries which are paid to the workmen or superintendents. The fee is a fixed price, as for example, $2 per visit, which is fixed by custom in much the same way as retail prices are

fixed, and is not affected by the time during which the service is rendered, nor by the intensity of the demand for the service. A man whose child is dying would cheerfully give all that he possessed to the physician who might save its life, but the charges of the physician are not increased on this account. In the field of industry, however, the prices paid for services rise and fall according to the demand for those services.

157. *How rates of wages are determined.*—In each of the classes of labor a certain rate of wage is established which is fixed by the custom of the trade and which changes very slowly. The general superintendent of a large coal mining company, for example, may be paid $15,000 per year; district superintendents, $5,000; the foremen and bosses, $1,000 to $1,500; the miners and engineers, from $60 to $100 per month; common laborers, from $35 to $50; and minor employés, boys and old men, from $15 to $30.

The lower limit of this rate is the wages either of the next lowest class or of some alternative employment. A locomotive engineer, for example, will not work for less wages than those paid to locomotive firemen. The machinists' wages will never fall to the level of a machinist's helper. The lower limit of wages also depends upon those of some alternative employment, such for example, as farming. Farm wages have advanced rapidly in the United States in recent years, and there are few farming districts where a strong and willing worker, no matter how unskilled in farming operations he may be, cannot receive $20 a month and his board. In the northeastern section of the country it is frequently possible for a man and his wife to secure employment together with board at wages from $30 to $40 a month and board is equivalent to a wage of $1.50 a

day. It is therefore impossible to force the wages of unskilled labor in a city or in the factory districts, located in the country, below this figure. The upper limit of wages is the value of the laborer to the employer. The standard rates of remuneration within each class are fixed by the demand for the labor of that class compared with the supply of that labor.

158. *Demand for labor.*—The demand for the labor of each class depends primarily upon the utility, in the opinion of the employer, of that class of labor. This utility is measured by efficiency, and efficiency is measured by profit. Modern systems of cost keeping have been worked out in such detail that it is possible to determine with great accuracy that portion of the cost of producing a commodity which is to be assigned to each class of employés. Careful records are kept of labor costs in different departments or on different jobs. On the basis of these records, judgments are formed as to the profitableness of particular mills or departments. The superintendent of a mill who receives a high salary is paid that salary to get results, and these results are measured by the earnings of the mill. He, in turn, by his system of cost keeping, is able to determine the efficiency of the different departments of the mill, which are in charge of foremen. If in a particular department costs are increasing, the superintendent informs the foreman of this fact and insists upon an explanation. The cause may be found in the inefficiency of a certain class of employés, who may either do their work badly, or may not do it with sufficient promptness to keep the department ahead of them supplied with material for work. Here again an investigation is made, and it may be possible for the foreman to fix the responsibility for the increasing cost of his

department upon some one employé whose efficiency has fallen below the standard. This employé may be reprimanded, or his wages may be cut, or he may be discharged. In the same way, if the profits of the mill increase, the manager's salary is raised. If he is a wise superintendent, he will advance the wages of his foremen, and they in turn, unless interfered with by restrictions imposed by organized labor, will push up the earnings of the employés to whose efforts their success has been due.

159. *Other causes affecting the demand for labor.*— The demand for labor depends also, very directly, upon the demand for the products of the industry in which the labor is employed. When prices are falling and business is depressed, the demand for even the most skillful and efficient superintendents and foremen is greatly reduced. As the saying is, "there is no work for them." At such a time, they must either remain idle or, if they are retained, their wages are likely to be seriously reduced. On the other hand, when business is active and prices are advancing, employers, in order to participate in these profits, rapidly increase their working forces and all classes of labor share in the benefit.

The demand for labor depends finally upon the amount of competition which exists between the employers of labor. Every mill is constantly on the lookout for good hands. There is a never-ending rivalry between establishments to lure away efficient help. This competition may be carried on by advertising, as when the common labor of the cities of the Middle West is attracted to the harvest fields by published notice of high wages with board and free transportation, and it also becomes effective through the influence of

employés who are constantly recommending to the attention of a foreman some friend or relative employed in another mill.

160. *The supply of labor.*—The supply of labor in each class consists of the number of laborers in the class, and is also influenced by the number of first-rate employés in the class below. The supply of unskilled labor is recruited from the immigrants. Nearly all the unskilled labor performed in the Northern States today, aside from farm labor, is done by Italians and Slavs. Without the aid of these new arrivals it would be practically impossible to carry on constructions which are necessary to the development of our resources. This fact is clearly recognized by all large employers of labor, and their influence has been sufficient to defeat any of the plans which have frequently been brought forward to be enacted into law, whose effect would be to seriously restrict the amount of immigration.

161. *Immigration.*—During the twelve years ending 1910, the number of immigrants entering the United States was 9,555,673. Of the number coming in 1910 17.1 per cent were from Great Britain and Ireland, Germany, Norway, Sweden and Denmark; 24.8 per cent from Austria-Hungary; 20.7 per cent from Italy; 17.9 per cent from the Russian Empire and about 19 per cent from all other countries. Between 1870 and 1910 20,541,754 immigrants arrived in the United States. Since the working population of the country at the present time does not exceed 40,000,000, the importance of the foreign element in our supply of labor can be appreciated. These immigrants are, with few exceptions, desirable additions to our population. They are the most energetic of the com-

munities from which they come. It is a serious matter for an ignorant foreigner to immigrate several thousand miles to a country with whose language and institutions he is entirely unfamiliar. Men who will take these risks are usually men whom it is worth while for the United States to incorporate into the body of our citizens.

Although the immigrant usually begins his work as an unskilled laborer he rapidly rises into the ranks of skilled labor and often displaces, as he rises, the nationality already in possession of the occupation, most of whose members move on into more profitable occupations. The French Canadians, for example, displaced other nationalities in the cotton mills of New England, and they in turn are being hard pressed by the Slav and the Italian. The Russian Jew has displaced all other nationalities in the ready-made clothing industry, and the Italian is rapidly gaining a monopoly of the barber's trade. Thus, not only unskilled labor but skilled labor is constantly being recruited from the ranks of the immigrants. The farm labor of the United States will in the future, much more than in the past, be drawn from the same sources.

162. *Conditions of employment as affecting the supply of labor.*—The supply of labor is also influenced, in like manner as the demand for labor, by the general conditions of employment. When business is active it is difficult to get sufficient number of hands, and enterprises are frequently crippled by lack of labor. This was evidenced by the great difficulty experienced by the grain and cotton farmers in 1905–1906 in securing enough men to harvest their crops, in competition with the railroads, which were offering as much as $1.75 per day to unskilled laborers. At such a time, moreover, in all trades the supply of labor is reduced by reason

of the difficulty of enforcing discipline. When a man employed on time wages knows that there are a dozen employers waiting for him if he loses his job, he is likely to be indifferent as to the admonition of his boss. During an industrial depression, on the other hand, the supply of labor is abundant. A two-line advertisement in the "Help Wanted" column of a daily paper is sufficient to bring a crowd around the door of a mill the following morning. In 1909 an advertising agent in Philadelphia inserted a request for an office assistant and received on the day following the publication of his advertisement 178 inquiries.

In May, 1909, only one-half of the bituminous coal miners of Pennsylvania were employed. In the iron and steel industry there was about 80 per cent of normal employment, and on the railroads 90 per cent. Smaller establishments made even a worse showing. The Baldwin Locomotive Works, for example, reported 13,000 less employés than in 1907, and in the railway equipment industry not more than one-fifth of the number at work in 1907 were employed in 1909.

The efficiency of labor is also far greater in dull times than during a period of activity. At such a time the inefficient hands are laid off, only good men are retained and these are spurred to the utmost diligence by the fear of losing their positions.

163. *Supply of labor in each class.*—The supply of labor in each class is influenced by various considerations. It depends first upon the natural ability and the degree of preparation necessary to qualify for the service required. In the railway industry, for example, we have the president, the traffic manager, the railway engineer and the section hand, each an employé and each representing a separate degree of ability. There

may be two hundred men in the United States who are qualified to serve as railroad presidents. There are certainly five million who can serve as section hands. The railway president may receive a salary of $50,000 a year; the section hand $1.25 a day. The work of the railroad president may mean profits of many millions of dollars to the company which he serves; it is often a question whether a section hand contributes more than the amount which he receives.

164. *Qualifications for various positions.*—Let us consider the different qualifications for these four positions, beginning with the last. All that is required for a good section hand is a reasonable amount of energy, ability to stand exposure to the weather, and to perform simple manual operations, such as spiking a rail to a tie, or tamping ballast, or cutting weeds along the right of way, or wielding a pick or shovel under the close supervision of a boss. No training or special knowledge is required and only a moderate amount of physical strength.

The railway engineer receives from $110 to $170 per month, and in some cases higher wages extending up to $300. To serve as an engineer, a man must have had a fair common school education, he must have served a term as apprentice in the roundhouse, and as fireman on a locomotive; he must have good vision; must be a man of correct habits, of courage and of unswerving fidelity to duty. He must understand not merely the running of the locomotive in such a way as to conform to difficult schedules without loss of time; he must also understand the mechanism of the locomotive so as to be able to make emergency repairs on the road. In short, the engineer must combine in his single person, the abilities and the training of the pilot of a ship and

a first class machinist, with the courage of a fireman or a policeman. This combination of qualities is rare, and it is not surprising to find that the supply of first class engineers, in normal times, falls short of the demand. A good engineer in charge of a fast freight train can save several times the amount of his salary over the work of a poor engineer in the speed with which he gets his train over the division.

165. *Railway traffic manager.*—The railway traffic manager is a man of a still higher type of efficiency. He must be intimately acquainted with the resources and industries of a large territory. His knowledge must extend to every product produced or consumed within that territory, which means that he must be conversant with the leading facts of every industry. Unless he possesses this knowledge, he will not be able to determine with accuracy what rates are required to show the largest earnings for his corporation. He must also be familiar with the movements of traffic so that he can be certain that an adequate car supply will be on hand when it is wanted. He must be experienced in dealing with men, since he is in constant contact with a large number of shippers who are demanding favors or proferring complaints. A successful freight traffic manager is rare and commands a high salary, $15,000 to $20,000 a year being not uncommon. Upon the result of his work depends the success or failure of his company, so that his salary may represent but a small fraction of the value of the services which he renders.

166. *The railway president.*—A railway president is the highest type of business executive in the United States. He is of various types, according to his preliminary training. Thus the late president Cassatt of the Pennsylvania Railroad Company came up through

the engineering department; he was a civil engineer, and he also thoroughly understood mechanical engineering as applied to railroads. President Newman, who resigned from the New York Central Railroad Company in 1909, came up through the traffic department; he served successively the Missouri Pacific, the North-Western, the Great Northern, the Lake Shore and Michigan Southern and finally the New York Central, rising from one rank to another to the highest position. President Mellen of the New Haven and Hartford is known best as an operating official, having come up through the operating department of various railroads, first, to the presidency of the Northern Pacific and then to that of the New Haven and Hartford. The late President Edward H. Harriman of the Union Pacific came into the railway service from the financial side; he gained great renown by his successful administration of the finances of his various companies, and by the facility with which he raised exceedingly large amounts of money.

The work of these executives is of incalculable value to the companies which they serve. They not only are familiar with every detail of the various departments through which they have passed but they must also thoroughly understand the work of all other departments. They are called upon to formulate far-reaching plans involving an expenditure of many millions of dollars for the improvement of the properties placed in their charge. They have often, not merely to formulate these plans, but to provide the money necessary to carry them out, and supervise the expenditure of this money after it has been received. Upon them rests the responsibility for the administration of properties costing hundreds of millions of dollars. The president

of the Pennsylvania Railroad, for example, has direct responsibility for nearly a billion dollars of property value. Many railroad bankruptcies are directly traceable to the inefficiency or recklessness of their presidents. On the other hand the prosperity of such companies as the Union Pacific, the Great Northern, the Atchison, and the Baltimore and Ohio is directly due to the energy and wisdom with which their affairs have been administered. The salary paid to an efficient railway president is trifling in comparison with the value of his services. There are, as we have stated, perhaps two hundred men who can perform the duties of such a position, but there are not more than a dozen railway presidents in this country who are of the highest type.

CHAPTER IV

SYSTEMS OF PAYMENT

167. *Payment of wages according to efficiency.*—We find this division of employés according to efficiency running through every branch of business. The supply of employés in every industry may be likened to a pyramid, divided into a number of cross sections. At the top there are very few men—the base is composed of the bricks and mortar of common humanity.

There is a growing tendency on the part of the employers to base the compensation of their employés directly upon their efficiency. To this end various systems of wage payment have been devised. The time-honored method of paying wages is so much per day, per week or per hour. These wages are paid to all workers in the same class and have little reference to the efficiency of each workman; they are standard rates. Under such a system only the most energetic employé will exert himself to do work of superior quality or to turn out a larger amount of work than his fellows. He does this, moreover, not so much in the hope of receiving higher wages in the class in which he works, but in order to rise into the class above him. Furthermore, such men are rare, and the tendency of time wages is to reduce every workman to an average in both quality and quantity. If he does more than the normal amount of work it not only exposes him to the jealousy and criticism of his fellows, but imposes an extra amount of mental and physical strain upon him

for which he receives no compensation. It has long been recognized that if some system could be devised whereby the workman would be paid directly according to the amount he produces, the results would be most beneficial to the employer. It is the object of every employer to make as much money as possible. These profits are made by producing goods and selling them at a profit. The more goods that are produced in a given time, if a ready market can be found for them, the larger will be the profit, and the amount of production depends directly upon the energy with which employés drive their work.

Furthermore, in the expenses of production are large sums which must be paid irrespective of the output of the mill. The mill has, perhaps, cost $200,000. Six per cent interest on this amount is $12,000 per year; depreciation is $20,000 per year; $1,000 will be paid for insurance; an office organization must be kept up; salesmen employed and retained in their employment; engineers and firemen and watchmen must be kept the year round; taxes must be paid. In the aggregate, these fixed expenses make up a formidable sum which must be added to the amount paid out in wages and for raw materials. These fixed expenses are divided by the total number of pieces of cloth, or gross of brushes which the plant turns out, to ascertain the fixed expenses per unit of product. The larger the output of the plant during a given time, the lower will these fixed expenses be, and the saving will be so much subtracted from the cost of the product. This fact constitutes a strong argument in the mind of the manufacturer in favor of basing the compensation paid to employés upon their efficiency, in order to induce them to turn out the largest possible product.

168. *Loss of time through idleness.*—These considerations are enforced by the well-known fact that the standard of efficiency in any plant where men are paid so much per day or per week is low. There is no establishment employing 1,000 men in which the actual loss of time every day through idling and gossiping, dawdling about work, going on unnecessary errands and "killing" time in a great variety of ways, does not exceed in the aggregate the time of ten men for ten hours each day. A loss of only six minutes a day by 1,000 men equals 6,000 minutes or 100 hours, the amount of time mentioned. Thorough supervision in order to prevent this evil of "soldiering" is impossible. The worker of to-day, unlike the slave whose aim was to accomplish as little as possible, turns out the largest product when his interest is so involved that he does not receive supervision. The best way to influence him to accomplish the best results for his employer is to convince him that by working in his employer's interest he is working in his own interest. Says Mr. Outerbridge:

> Few operatives succeed in obtaining regularly day by day the maximum output from any machine; some have not the requisite skill, others fail through lack of attention to small details, such as forethought and method in grouping or assembling the work, others through laziness or disinclination to turn out more than a certain amount of finished material in a day. An operative may also, through lack of constant attention to the work, unconsciously limit the output of a costly machine and thus cause loss to his employer far exceeding the entire amount of his wages.[1]

This loss is a certain one. Suppose that the average

[1] "The Premium System of Wage Payments," Alex. E. Outerbridge, Jr., *Annals of the American Academy of Political and Social Science*, 1903.

wage in the establishment mentioned is $2 per day. The full time of ten persons, $20 per day or $6,000 per year, represents a good return on $100,000 of capital. If this loss could be saved, the owner of the mill would add $100,000 to its value.

169. *Systems of wage payment calculated to increase efficiency.*—Three plans have been advocated to identify the interests of the employés with those of the employer, and to encourage him to turn out the largest possible amount of work. These methods are as follows: Profit-sharing, piece work and the premium system. By the system of profit-sharing a certain percentage of the profits is divided among the employés at periodical intervals. In some cases they are allowed to subscribe to the stock of the company on favorable terms. Other plans give them an interest in all profits over a certain amount; still others divide a fixed percentage on the entire profits of the year.

Profit-sharing has not proven successful; various practical objections having been discovered to it as a result of many experiments. In the first place, profit-sharing fails to produce the desired results in the increased efficiency of the individual employé. When the profits of the concern are the joint result of several thousand workmen, it is impossible for any one man to trace the connection between the bonus which he will receive at the end of the year, and the increased energy and attention which he may have put into his work. Few workmen are able to look ahead twelve months or even six months to the results which will come to them because of increased effort to-day. Employés are also apt to be dissatisfied with the results as stated. They believe that the firm is making large profits, even when profits have been reduced from causes

altogether beyond their comprehension. They are apt, therefore, to become dissatisfied, and then the good results of the profit-sharing plan fall to the ground.

170. *Profit-sharing unfair to employer.*—Moreover, the profit-sharing plan is not entirely fair to the employer. There are many conditions which affect profit and loss in the manufacture of raw material into finished products with which the operative has no connection—careful buying of material, favorable traffic contracts, payment of large sums for inventions that reduce costs and of unusually high prices for patented machinery. Such causes may add largely to the profits of the concern. Unless the employé is willing to share in losses due to mistakes and blunders of the management or to the general industrial situation of the country, it is manifestly unfair that he should ask to participate in profits in whose making he has had no share. Furthermore, aside from these considerations, it is impossible to open the books of a concern to the inspection of the employés, nor would they understand the method of accounting even if the books were opened. For these reasons, profit-sharing, although it is in operation in a number of concerns, is not regarded by practical business men as a plan which can be recommended for general adoption.

Progressive wages have served to increase the laborer's efficiency, but they have not avoided entirely disputes between employers and employees. Profit sharing is a plan for giving the laborer an inducement to work efficiently, and for securing greater harmony of interests between employers and workmen. Under its provisions hired laborers are given shares in the profits of the business, the share of each workman being determined beforehand upon some equitable basis. The purpose of such an arrangement is to induce laborers to increase their

output, improve its quality, and thus contribute toward the creation of extra profits in which they may share. In some instances experiments in profit sharing have had this result, and have proved at least moderately successful. But in many cases they have proved unsuccessful, and have been given up. A common reason for such failure is that there have been very small profits to divide, or even no profits at all; so that laborers have had little interest in the scheme, and have not hesitated to strike if there was any prospect of immediate advantage resulting from such a course.

Experience has shown that profit sharing does not do away with strikes, although in some cases it has promoted a better understanding and feeling between employer and employed. Concerning its merits as a plan for distribution, the following points may be noticed. If the share of profits received by laborers is created by increased efficiency and exertion on their part, then it may be as favorable to efficient production as systems of progressive wages, but hardly more so. Unfortunately, however, the profits actually realized by a business depend so much upon good management by the employer that their amount may not vary proportionately with the increased zeal and efficiency of the workers. Laborers may increase their product 10 per cent, but bad business management may result in an actual loss on the sales. In such a case profit sharing may be unjust to the employé. On the other hand, if the profits received by the laborers are merely a gratuity from the employer, then the system is unfair to him. For laborers would be made to share in any profits earned by the business, while they would bear no share of the losses. In conclusion it may be said that profit sharing has accomplished less than its more ardent supporters have expected.[1]

171. *Piece wages.*—By the system of piece work, the employé is paid according to the amount which he does. In a cigar factory with which the writer is familiar, the rate for rolling high grade cigars is $20 a thousand.

[1] C. J. Bullock, "Introduction to the Study of Economics," pp. 486–7.

A first class operative in this mill can roll 180 cigars a day, which will give him earnings of over $3. A beginner or an inefficient hand will not roll more than fifty or even a smaller number. This system of piece work is very largely employed wherever the connection of the employé with the product is personal and direct and where the attitude of laborers does not make this undertaking impossible.

172. *Objections to piece work.*—The objections to this system, however, are serious. Piece work, from its very nature, puts a premium on quantity rather than quality. Very careful supervision and inspection of the product is, therefore, required if the quality is not to deteriorate. Again, the workmen are generally hostile to the system on account of the practice, which is common among employers, of cutting piece rates so as to compel the workman to labor much harder to gain the same wage than he did under the time system. This objection is almost inherent in the system. When piece wages are established the usual method is to ascertain how much an employé of average capacity can turn out in a day, and to divide this quantity of work into the standard wage, giving a rate per piece. As soon as the system is introduced, earnings immediately increase because an increased amount of work is turned out. Although this was the object of introducing this system, yet the thought immediately comes to the employer that his men have been doing less than fair work under the old system of time wages. He therefore frequently yields to the temptation to reduce their rates, since he is unable to see that they are doing more work than they should for the wages which he is paying them.

Furthermore, employers frequently spend large sums of money in re-equiping their plants with expensive

machinery which greatly increases the output of the mill. They pay for these improvements and they do not feel that the workmen whose piece wages are enormously increased as a result of the improvements, should gain all the advantage. The strike in the works of the Carnegie Steel Company in 1892 was precipitated by an attempt to reduce piece wages which had risen for some classes of labor to such an enormous figure that certain employés were making more money than the average superintendents, a fact due entirely to the introduction of improved machinery by the company. The cutting of piece rates constitutes a formidable objection to the system of piece wages and is responsible for the universal antagonism of labor organizations to this system of wage payment.

173. *The premium system of wage payment.*—The best method of solving the problem of increasing the laborer's efficiency is by what is known as the premium system, by which the results of the increased efficiency of the piece rate system are divided between the employer and employé. Under the premium system, the saving which results from the joint effort of the employer in the constant improvement in machinery and processes and in his attention to various details of works management, and the increased diligence of the employé, who is paid according to the amount he produces, is divided between them. In introducing the premium system, the first step is to establish in each branch of the business an average standard performance; to ascertain by careful observation the amount of work which a man of average capacity, working with reasonable diligence, can perform in an hour or a day. This is made the standard to which every employé is required to conform in return for his regular wages, which are fixed at a

certain figure for all employés of that class. At the same time, he is informed that any saving in the labor cost of producing the product on which he is engaged, will be divided on a certain agreed basis between himself and the firm.

The employer, in other words, makes this proposition to his workmen: "I will pay you a minimum day wage and for that wage you must produce certain minimum number of pieces in order to deserve that wage; for each additional piece you add to that minimum you will receive so much." For ten pieces, under the premium system, a man would be paid $10, or $1 for each piece. If he turns out fifteen pieces, instead of receiving $15, as under the system of piece wages, he may receive $12.50 or $13 as result of his diligence in doing more than his allotted task. He thus receives a reward and his employer has also shared in the profit to which the employer may contribute by the investment of his money in facilitating the various operations of his plant.

The following illustration furnished by one of the managers of a large foundry and machine shop, shows the effect of the piece work system:

COST OF PRODUCTION PER LATHE PER DAY.

Ordinary Piece-Work System.		*Differential Rate System.*	
Man's wages	$2.50	Man's wages	$3.50
Machine cost	3.37	Machine cost	3.37
Total cost per day	$5.87	Total cost per day	$6.87
Five pieces produced; cost per piece	1.17	Ten pieces produced; cost per piece	.69

174. *Summary of the advantages of the premium system.*—Mr. Outerbridge, in the article already referred

to, illustrates and summarizes the advantages of the premium system as follows:

Reference may be made to a case where new work was introduced into an establishment undertaking an entirely new kind of manufacture. The concern had never done the work before, so did not know at all what it was going to cost. Parts of the machines were given out to the different departments to be made by day's work, because nobody knew what the cost was liable to be. The people selected to work by the day were the men who were considered the quickest and best workmen in the establishment, who would be likely to make those parts under the system of day's work as cheaply as they could be made, so that the actual cost of making them in this way might be made the basis for a piece-work price. Quite a large number of the parts were made by day's work. I saw some of the work being done myself, and did not observe anything that led me to believe that there was any loafing on the part of the men. A piece price was finally fixed based upon the average cost by day's work. After the men got more skilled in their jobs they did a little better, but the average was taken for the piece-work price. It so happened that some precisely similar things were made in another establishment, and through an accident it was ascertained that an article which cost about twenty-four dollars to make under this system of piece work cost about thirteen dollars to make in the other establishment where a premium system was in vogue. An investigation showed that the actual amount of labor required to make the pieces was the same in each foundry, but in one the simple piece-work system of pay obtained; in the other a premium system. Then an entire change of personnel in the department, including the foreman, was made; new men were engaged to do the work on a premium system and the result was surprising. In a very short time the new men were making nearly double the wages of the former operatives and the cost per piece was reduced nearly one-half.

175. ***Advantages to employés from introduction of***

improved machinery.—In the same article Mr. Outerbridge says:

This system, of course, does not spare the tools, which are run at a high rate, and, since its introduction, the views of progressive manufacturers regarding the economical use of machine tools have materially changed. Formerly old tools were venerated and carefully preserved as long as they could be used. Now the aim is to obtain the full life-service in the shortest possible time, and then to consign the tool to the scrap heap. In this way tools are worn out long before they have become obsolete in design. "Soldiering" on the part of the operatives is effectually eliminated, wages are raised, the output increased and cost of production is decreased in an amazing ratio. All this is accomplished without exhausting toil on the part of the operative, for the machine has relieved him of most of the hard work. Especially is this noticeable in handling heavy materials. In former days rupture was very common indeed among molders in foundries, caused by frequent severe straining in lifting flasks and molds; now it is a rare thing to find rupture among the younger molders, owing to the fact that in all modern foundries traveling cranes and other hoisting appliances are provided for lifting heavy materials and carrying them from one place to another.

Within my own experience there has been a great improvement in this respect. I can recollect at least six molders in one foundry who were badly ruptured from lifting their molds, while to-day I never hear of this trouble, for the main cause has been removed. The mechanic of to-day, who is engaged in riveting a boiler or a bridge structure, no longer spends ten hours a day in striking blows with monotonous regularity upon the rivet heads, but he is employed to control the steam or hydraulic riveting machine, a sort of giant hand, which presses the red-hot rivet into place with a simple silent squeeze of its powerful finger far more effectually than can be done by two strong men striking one hundred blows each with a riveter's hammer. This has been proved by official tests.

176. *Hazards of different occupations.*—The supply of labor is influenced by the dangers and risks incident to the occupation. This influence operates in two ways. In the first place the supply of men whose character and training qualifies them to engage in a hazardous occupation is limited in such callings as that of the locomotive engineer, the structural iron worker, and the city fireman, which require a degree of courage and steadiness of nerve possessed by very few men. Then there are a number of occupations so unhealthful and even deadly that special inducements must be offered to secure an adequate supply of labor. The worker in these occupations requires no unusual moral or physical quality, but when he enters them he risks his life, either because of the unusual risk of serious accident, against which he cannot guard himself, or because of the naturally unhealthful conditions surrounding the occupation.

Coal mining is one of the hazardous occupations. It is, at best, a dangerous employment. Water drips upon the mine worker from the roof and oozes around his feet. There is constant danger in electrically equipped mines from live wires which run only a few inches above the heads of the miners. Even with perfect ventilation, which is rarely found, the air is frequently foul with powder fumes, and the pitch darkness is barely pierced by the feeble gleams of the mine lamps. The mine worker's toil is, moreover, enlivened by the constant danger of falls of slate, against which at times no caution can protect, while the danger of explosion, especially in bituminous coal mines, is always present. Much of the work is itself excessively severe; that of loading cars with coal and handling heavy pieces of slate being especially arduous. Coal mining is at best an unhealthy, exhausting, excessively disagreeable and

supremely dangerous occupation. The mine worker carries his life in his hands. Measured by the perils and hardships of his calling he is entitled to the highest wages and the most liberal treatment, neither of which, at least until recent years, has been accorded him.

Largely as a result of the hardships and dangers of the coal mining industry and also because of the fact that the mine worker, when thoroughly organized, is not amenable to discipline, the supply of labor, even at mines which pay high wages, is very irregular. Steady work in the mine is too severe for a man of average physique and it is difficult during periods of active demand for the companies to secure sufficient labor to supply their customers.

177. *Illustration from manufacture of bleaching powder.*—Another illustration of dangerous occupations is given in Wood's "Primer of Political Economy," in a description of the method of making bleaching powder:

> In another part of the works are men laboring before great furnaces. Each has a large bunch of oakum in his mouth to keep him from inhaling the poisonous gas escaping from the salt cakes, which he is turning and drawing from the glaring, heated aperture. With two towels he manages to wipe the perspiration from his face, one towel being in use while the other is drying, and there he works in the heat for eight hours with scarcely a minute to snatch a bite of food. The work of the salt-cake men consists of baking common salt and treating it with vitriol to make muriatic acid, such as tinsmiths use in soldering. They can be recognized anywhere by the effect of the poisonous gases they are compelled to breathe, which not only destroy the lungs, but attack the teeth, causing them to decay rapidly and fall out. A salt-cake man has no teeth, or perhaps a few blackened stumps remain, and as he is unable to chew his food, indigestion as well as diseased lungs adds to his af-

flictions. The effect of this work is noticeable in less than a year.

In another building are men shoveling slacked lime, turning it over and over until it is finally loaded into the lifts that convey it to a chamber where it is treated with chlorine. The white particles of lime are in the air all about them, and here again each has a big bunch of oakum in his mouth to prevent him inhaling the irritating and burning dust. At this they can work only twenty minutes at a time, with short intervals of rest, for a shift of seven hours. After the day's work they wash themselves with oil or tallow, for the application of water to their faces or hands, with every pore filled with lime, would cause terrible, if not fatal burning. At this work there is a tendency to many diseases always associated with the handling of lime, and blindness from the alkaline burning is not uncommon.

On each side of a long corridor are small sheds which seem like infirmaries for the victims of the deadly gases and the corrosive acids and dusts of the works. In these sheds are the half-blind victims of lime-shoveling, the asthmatic and decrepit packers, the toothless salt-cake men and the used-up vat men, barrow men, and general workers. There they sit day after day, breaking the stone from which sulphur is to be extracted, and the click of their hammers has won for them the jocular name of the hand-bell ringers. This is the last occupation about the works, and as the men weaken at it they are removed to the workhouse, their places being filled by others unfit for the more arduous occupations. These men are not old, for the work is such that they seldom or never live to an advanced age. Every branch of the work is dangerous and destructive.[1]

The wages paid in such occupations are very high, but even the highest wage for such work is entirely inadequate remuneration for the nearly inevitable sacrifice of life and strength which a few years of such employment involves.

[1] "A Primer of Political Economy," S. T. Wood, p. 23.

178. *Supply of labor depends on chances of success.* —The supply of labor in different occupations is much influenced by the chances of success. Largely because some lawyers, physicians and engineers make from $100,000 to $500,000 a year, the lower ranks of these professions are crowded with men, most of whom are unfitted for their work and will never make more than a bare living, but are buoyed up until the age of accomplishment is passed by the hope of success. The sight of the glittering prizes which a few successful men achieve is in part responsible for overcrowding the professions. The same influence is responsible for the oversupply of clerks in banks and brokerage houses. There are thousands of young men working in the financial districts for less than a comfortable subsistence, or even skimping themselves of all but the bare necessities in order to hold a routine position in some banking or brokerage house, from which they believe that, as a few men have done, they may rise to great wealth.

Social esteem and a dignified position in the community influence the supply of labor in different occupations. This is very well illustrated by the attitude of factory communities toward different classes of working girls. Stenographers and clerks, although they may be paid much lower wages than mill hands, stand on a higher social plane. In the same way young men, when they can wear white shirts at their work, and keep their shoes nicely polished and their clothes in good condition, find solace and compensation for the fact that a good mechanic will usually make higher wages than they receive. Other illustrations of the same principle are furnished by the overcrowding of the teaching and ministerial professions. Those who elect these callings must take their compen-

sation very largely in dignity and social esteem. They find quite often with advancing years that it would have been wiser for them to have substituted cash for this peculiarly unsubstantial variety of credit.

The chances of advancement influence the supply of labor; many graduates of technical schools, for example, are willing to serve in subordinate positions in shops and mills in order to supplement their theoretical knowledge by practical experience. They use these subordinate positions as stepping-stones to higher positions, and so increase the supply of labor in these lower grades. The ranks of labor in all positions preparatory to better paid work are apt to be overcrowded from the same cause, and the wages paid in such occupations are therefore lower than if they were not looked upon as stepping-stones to higher positions.

179. *Sole or partial dependence of labor on wages received.*—The supply of labor is largely influenced by the sole or partial dependence of the laborers upon the wages received. The importance of this influence is illustrated by the low wages paid to women. The majority of women in industry are unmarried and living at home. They are not, as a rule, entirely dependent upon their earnings for support and are, therefore, willing to work for lower wages than they would otherwise demand. This fact is responsible for the system which prevails in the clothing trades known as the "sweating" system, where most of the work is done in the homes and is passed through various grades of subcontractors. Each one of these "sweaters" is working on a narrow margin of profit and is compelled to take every advantage of the worker who is usually required to call his entire family to his assistance before he can make decent wages. Women's wages are also in-

fluenced in many cases, it is claimed, by their relative inefficiency, which is due to their lack of permanent interest in their work. Most unmarried women expect or, at any rate, hope to marry. On this account, they do not devote themselves to any calling with the same zeal and energy as they would if they expected it to be their life work.

This is well illustrated by the teaching profession. From time to time, there has been an agitation in favor of paying the same wages to women teachers as to the small number of men who can be attracted into this most important of all the professions. These attempts have generally been unsuccessful, however, and the main reason given for refusing equal payment to women teachers is that high salaries are wasted on them. The community, it is claimed, does not receive a return in their increasing efficiency, since their places have constantly to be filled by new recruits. A recent writer on the subject proposes as a solution of the problem a frank recognition of the fact that a woman should not be retained in teaching beyond the age of thirty years, and that up to that point she should be paid unusually high wages in order to attract talent and stimulate interest.

CHAPTER V

LABOR ORGANIZATIONS

180. *The trade union and the supply of labor.*—The most important influence upon the supply of skilled labor is the trade union. These are voluntary unincorporated associations which have been formed in almost every trade by workmen who desire to improve their position in bargaining with their employers. The justification of labor organizations is fundamentally the inequality in bargaining ability between employer and employé. The employer has on his side all the advantages of wealth, position and training. The employé is poor, usually living from hand to mouth; he is ignorant, and his bargaining ability is small. If we assume that in making such an important bargain as the wage contract involves, there should be an equality of capacity between two parties, we must approve the organization of workmen so that they can deal with their employer, not as single men, but as an organized body whose representatives can meet and treat with the employer on an equal footing.

Trade unions are of two kinds, but of substantially the same form of organization. The first is where men following a particular trade form themselves into a union, for example, bricklayers, carpenters, steam-fitters or stationary engineers; the second are known as industrial unions and include all occupations in a particular industry. Illustrations of industrial unions are the Garment Workers of America, the United Mine

Workers of America, the Amalgamated Association of Iron, Steel and Tin Workers.

181. *Form of organization of union.*—The following description of the condition of the United Mine Workers of America by Dr. Frank J. Warne, in his book "The Coal Mine Workers," will apply, with minor changes, to all of the large unions:

In many of its features the general scheme of organization of the United Mine Workers of America bears a close resemblance to that of our political organization. It is made up of national, district (state), sub-district, and local unions. The national union, of which there is but one, is designed to have jurisdiction over all the coal mine workers of the United States, although recently it has also been extended into British Columbia. In consequence of this inclusion of the miners of the Dominion, the 1906 Convention amended the organization's constitution by substituting the term international for national. There are 23 distinct unions, approximately 35 sub-district unions, and about 2,700 local unions.

Subject to the constitution of the national union and the legislation of the national convention, the district union, as a general statement, has jurisdiction over a particular state. This is due largely to the convenience of state-line divisions. There are exceptions, however. In Pennsylvania, for example, owing to the usual importance of the coal producing area of that state, there are six districts—Numbers 1, 7 and 9, covering the anthracite region; District 2, in the Clearfield or central soft-coal field; District 5, in the Pittsburgh or western bituminous coal field; and District 16, which also includes Maryland. In Indiana, District 8 covers the block-coal field, and District 11 the bituminous coal territory of that state. In a few cases one district extends over more than one state—District 15 takes in Utah, Colorado and New Mexico; District 17 includes Virginia as well as West Virginia; District 21 takes in Arkansas, Oklahoma and Texas; and District 22 covers both Montana and Wyoming.

Under the constitution and legislation of the district union are sub-district and local unions. The sub-district union has been made a feature of the organization in order that special regulation may be secured in particular cases for varying conditions, which prevail in almost every state, without placing the whole district in jeopardy when only small areas are affected. The local union is the unit making up the sub-district, district and national unions, and naturally is the smallest in membership of the four unions. One local union usually has jurisdiction over the mine workers at a particular colliery or mine. It must have at least ten members.

Over all the unions the constitution and legislation of the national union are supreme. In those states where a joint conference between representatives of operators and mine workers has been established, the provisions of its agreement take precedence over the constitution and by-laws of the district, sub-district, and local unions, and are second only to the legislation of the national convention. Outside these joint agreements and the constitution and legislation of the national union, the district exercises authority and governing surveillance over the sub-districts and locals. Each union, however, has its own constitution and by-laws, its own officers and conventions, and legislates for its own particular area and group within the authority granted to it.

182. *The United Mine Workers of America.*—Dr. Warne writes further of this organization as follows:

The United Mine Workers of America is one of the most democratic, with the possibility of at once becoming one of the most autocratic, of any organization in the world. It is democratic in the sense that in the final analysis its policy and management are in the hands of its members. All power vests with them in their collective capacity. To them, in their local unions, every great question affecting the national, district, and sub-district unions is referred sooner or later; from the local unions —from the active, every-day workers in the coal mines—come

the final decisions on all such questions. They nominate and elect, by direct vote of the members, the president, vice-president, and secretary-treasurer; they indirectly, through their particular districts, elect the members of the national executive board; they choose the delegates that make up the national convention; they send instructions to this convention upon most of the recommendations made to that body by the president of the national union; they instruct their delegates how they are to vote; they not only choose the national and their own local officers, but through regularly elected delegates they compose the sub-districts and districts, and through these determine the policy that is to be adopted in any particular instance.

183. *The national convention.*—The same writer thus describes the annual convention held by this union:

Once a year representatives of the local unions meet in regular convention as the national union, usually at Indianapolis, beginning the third week in January, and for ten days or two weeks, outline the policy of the national union for the ensuing year. This convention possesses absolute power; there is nothing affecting the organization it cannot do, even to altering or amending its fundamental law—the constitution. It can even abrogate, if it so chooses, the agreement of the interstate joint conference. Its delegates are elected directly by the local unions on the basis of one vote in the convention for each one hundred members (or less), and an additional vote for each one hundred members or majority fraction thereof. No representative, however, can cast more than five votes on any question. In the 1905 convention, there was a total of 1,057 locals represented by the delegates who cast 1,877 votes. The representative must be "a miner or mine worker or employed by the organization" and a member in good standing of a local union in the district he represents (Section 2, Article V, of the constitution). The constitution of the national union interprets the term "miner or mine worker" as meaning "any one working in or around the mines and a member of a local union." Any member of the United Mine Workers occupying a position other than that of

miner or mine worker, excepting those holding positions with the organization or with any other affiliated union, is ineligible as representative to any sub-district, district, or national convention, nor can such member represent the United Mine Workers in a central body or state Federation of labor convention. The object of this constitutional provision is to safeguard the unions from possible domination by men under the influence of their employers. Special conventions, the delegates to which must possess the above qualifications, are provided for by the constitution. The purpose of the national convention is to legislate on any question pertaining to the objects of the organization.[1]

184. *Objects of the trade union.*—The objects of the United Mine Workers organization is stated as follows in the preamble to the constitution:

"There is no fact more generally known, or more widely believed," says this preamble, "than that without coal there would not have been any such grand achievements, privileges and blessings as those which characterize the twentieth century civilization, and believing as we do, that those whose lot it is to daily toil in the recesses of the earth, mining and putting out this coal which makes these blessings possible, are entitled to a fair and equitable share of the same; therefore, we have formed 'The United Mine Workers of America' for the purpose of the more readily securing the objects sought by educating all mine workers in America to realize the necessity of unity of action and purpose, in demanding and securing by lawful means the just fruits of our toil."

Under this general purpose are included shortening of the hours of labor, raising of wages, the securing of legislation favorable to the interests of the workingmen and the general improvement of the social and economic conditions of their members.

185. *The trade agreement.*—Whenever possible the

[1] Frank J. Warne, "The Coal Mine Workers, p. 2.

union endeavors to make wage contracts for all of its members covering terms and conditions of employment for a given period. An illustration of such an agreement is contained in the following provisions as to the payment for coal mining in the agreement between the United Mine Workers and the bituminous operators signed at Indianapolis, April 1, 1904:

That the interstate agreement of the present year shall be continued with the same conditions for two years from April 1, 1904, until March 31, 1906, with the following exceptions, to wit:

First. That the price for mining be reduced five (5) cents per ton on inch-and-a-quarter (1¼) screened lump coal, pick-mining, in western Pennsylvania thin vein, the Hocking, the basing district of Ohio, and in both block and bituminous districts of Indiana; three (3) cents per ton on mine-run coal, pick-mining in the bituminous district of Indiana, and at Danville, the basing point of Illinois.

Second. That the price for machine-mining be reduced four (4) cents per ton on screened lump coal in western Pennsylvania thin vein, and the Hocking, the basing district of Ohio; five (5) cents per ton on screened lump coal in the block and bituminous district of Indiana, and three (3) cents per ton on mine-run coal in the bituminous district of Indiana, and at Danville, the basing point of Illinois.

Third. That the inside day-wage scale shall be as follows, with the conditions of the Columbus day-wage scale agreement of 1898, to wit:

Tracklayers	$2.42
Tracklayers' helpers	2.23
Trappers	1.06½
Bottom cagers	2.42
Drivers	2.42
Trip riders	2.42
Water haulers and machine haulers	2.42
Timbermen (where such are employed)	2.42

Pipemen, for compressed-air plants	$2.36
Company men in long-wall mines of third vein district, northern Illinois	2.23
All other inside day labor	2.23

Fourth. That yardage and dead-work be reduced in the same proportion.

Fifth. That internal differences in any of the states or districts, both as to prices and conditions, shall be referred to the states or districts affected for adjustment.

Further, in pursuance of the authority vested in us, we hereby call a joint convention of the coal operators and miners of western Pennsylvania, Ohio, Indiana, and Illinois, to meet at Indianapolis, Indiana, at 10 o'clock a. m., January 25, 1906.

In addition this contract settled the "basing point," in each state concerned, for work about the mines; fixed upon 2,000 pounds as a ton for the entire central competitive fields included in the agreement; recognized the two general methods of fixing rates upon a screened coal of mine-run basis; agreed upon regulation screens where the screen method is in use; established a differential between machine and pick-mining under whichever method employed, between punching and chain-machine mining, between thick and thin-vein pick mining; and made eight hours a day's work for all classes of mine employés. This agreement settled for a time almost every important question which could arise between employer and employé in the soft coal industry.

These agreements are generally observed with fidelity on both sides. The employers are responsible persons and can be held to their agreements by process of law. The unincorporated labor union has been criticised because it is not responsible, but in several very noteworthy instances, notably during the anthracite

strike of 1902, organized labor has refused, even under pressure of apparent necessity, to abide by the letter of their agreement. Minor violations of agreements are constantly occurring on both sides, but in general they are faithfully observed, and are most satisfactory to both sides. Especially do employers favor the method of collective bargaining because it enables them to go ahead with their calculations on the basis of a fixed labor cost which they know will not be disturbed during the life of the contract.

186. *Contests between employer and employé.*—In only a limited number of cases, however, are these wage agreements made. Generally speaking, there is a certain amount of conflict and contest between employer and employé on a variety of matters. A labor organization, no matter whether a collective bargain is made or not, is active in behalf of its members. Its local representatives circulate through the shops where the members are employed, and hear any complaints which they may have to make of ill treatment or injustice at the hands of foremen or employers. If, for example, a man is discharged, and does not consider that he has been at fault, he appeals to the shop committee, who take up his grievance with the superintendent and endeavor to secure his reinstatement. The shop committee also investigate wage conditions, and if they consider that members have a legitimate grievance, they will endeavor to secure its correction. The union is also represented in these negotiations with employers by walking delegates, who are district superintendents, visiting a number of shops and mills and conferring with the local representatives.

If an agreement on any matter of dispute is not reached after conference with the employer, the matter

may be taken up by the various governing boards of the union, each one in turn endeavoring to reach a basis of settlement. When it reaches the district board or the national board, according to the importance of the case and the constitution of the union, an ultimatum is issued to the offending employer and he is threatened with a strike.

187. *The strike.*—The strike is one of the most familiar of American industrial phenomena. It is simply the refusal of a number of workingmen, usually organized, to sell their labor for less than a stipulated price, or to work under other than specified employment, coupled with the refusal of the purchasers of the labor —the employer—to accede to the demand. A peaceful and sane method is the method of collective bargaining, which has already been described. This may be likened to arbitration in the settlement of international disputes. On the other hand, just as in differences between nations, when negotiations fail, we have war. The strike is a condition of industrial warfare.

The following description of the strike by Dr. Warne gives a fair and accurate representation of the working of industrial warfare from the standpoint of a disinterested observer.

> Realizing that the primary object of a trade union in inaugurating a strike is to secure a specified wage and well-defined conditions of employment, its first object is to control the law of competition in that particular industry so that labor cannot be sold there for less than the wages asked or under other than the specified conditions of employment. To do this the employés in that industry must first be persuaded to refuse to sell their labor except upon the union's terms. This is secured from some by their becoming members of the union

and abiding by its rules and regulations, and this is accomplished usually through the organizers—the "agitators" or "walking delegates" as some would have them called. It is safe to say that no strike can be inaugurated with any prospect of its success unless a considerable number of the employés are bound together in a community of interest to support actively the demands of the union. These men form the nucleus of the Trade Union and are a powerful entering-wedge in persuading others who sell their labor in the same market, to raise its price or to refuse to lower the price, as the case may be. This is done by creating a public sentiment among the group of workers and in the particular community through mass meetings, addresses and proclamations of the leaders, by boycotting, picketing, ostracism, marches, and in innumerable other ways devised as occasion may arise.

188. *Picketing in strikes.*—In controlling the ordinary supply of labor in the industry, committees of union men visit personally every man employed who has not already been captured by the organizers, and his position is definitely ascertained. This is one of the most important uses of picketing, by means of which men are met on their way to and from work, the pickets being located at their homes, around the collieries, and along the highway, or wherever there is the possibility of meeting men who continue at work. So severe was the picketing in the strike of 1902 in the anthracite fields that many of the mining companies surrounded their collieries with high board fences, having strands of barbed wire strung along the top. Guards at the entrances prevented access to the men at work, who remained inside the grounds day and night. In fact, some collieries became regular stockades. With the employés continuing at work the pickets at first have recourse to the powers of friendly and peaceable persuasion, but if these fail to induce the men to join the union, or, if not this, at least to remain away from work, then upon the non-union men are brought to bear social forces verging upon lawlessness, and overstepping the safeguards the state has thrown around individual liberty, which only a

strong public sympathy with the cause of the union will support. The more important of these social forces are ostracism and boycotting, with their accompanying manifestations.

189. *Ostracism.*—Ostracism is a stronger social force in maintaining a high standard of personal conduct than most of us realize. It means banishment or exclusion from social intercourse or favor, and is usually employed by a particular group against members of its own class or craft. Its most effective weapon is some term of reproach coined for the purpose. Lawyers, for example, who do not come up to the standard set for that profession by its dominant group, are ostracised and termed "shysters." So it is with the medical profession, physicians engaged in questionable practices which the dominant group denounce are ostracised by the more reputable practitioners with the reproachful term "quack." The same social force is at work among the industrial classes. Union men set a standard as to wages and conditions of employment in a particular industry, and those workingmen who fall below that measurement in offering their labor for a less price, are ostracised and denounced as "scabs." Whether the group be doctors or lawyers or workingmen, whatever it adopts as the standard of measuring conduct along particular lines is sooner or later taken up by the broader social grouping in the community and accepted as its standard of judgment. This is particularly and strikingly true of a community closely identified with an industry, the livelihood of whose members depends upon the industry's activities, and in which a dominant group (usually members of a trade union) creates the industrial standard. This explains the attitude of hostility an industrial community exercises towards the "scab." It explains, also, perhaps, how men far removed from the influence of the working classes can look upon the "scab" as "a hero."

190. *Illustrations of ostracism.*—The social force of ostracism, put into operation by the working of the trade union, is directed, and particularly so in strike times, not only against the "scab" himself, but also along all those channels of social relations affecting him and which might have influence upon him in

bringing about action conformable to the standard of the dominant group. The strength of this weapon in the strike of the anthracite mine employés in 1902 caused union men and their families to refuse to associate with the workingman who continued his employment in the mines; it expelled a prominent and otherwise highly-respected citizen from a benevolent society which had for its object the assisting of sick members and the defraying of a part of the funeral expenses of those who died, and of which he had been a member in good standing for more than twenty-seven years; it forced a member of a temperance society who had been faithful and active for twelve years to resign; it caused children of striking mine workers not only to refuse to attend the school of a woman teacher whose aged father was a watchman at one of the mines, but they also demanded that she be discharged. Children of union miners would not attend Sunday school with their former playmates whose relatives continued at work; members of the Lacemakers' Union employed at a silk-mill refused to work alongside girls whose fathers and brothers would not strike; clerks were dismissed from stores and business establishments because they were related to men who continued at work in the mines; congregations in more than one religious denomination were split into factions by union members refusing to worship alongside non-union mine workers; even promises of marriage were broken through relatives of one or the other contracting parties being non-union workers.

The "scab" was not infrequently held up to public scorn and ridicule by the publication of his name in the "unfair list" of the newspapers in the mining towns as being "unfit to associate with honorable men"; he was represented by name on signs attached to effigies dangling from electric-light, telegraph, and telephone poles and wires and from trees in front of his home and along the highways and streets; a grave in his yard with his name placed upon the board at the head to represent a tombstone not infrequently confronted him; the sign of "the skull and cross-bones" was painted on his house, and in innumerable other ways, conceivable only by workingmen whose

imaginative faculties have been aroused by the desire for persecution of others who oppose a cause which is so vital to their home and family, was created a public sentiment against the non-union employé.[1]

191. *The strike an effective weapon.*—The strike is the only weapon which the union has to enforce its demands, but it is a very powerful weapon. It may be confined to a single shop, or, in case the executive officers deem it necessary, the strike may be extended throughout the entire industry, thus involving employers who have no connection with the dispute which brought on the strike. Most of the unions collect from the dues of their members "defense funds" out of which the needy among the families of strikers are supported. During the anthracite coal miners' strikes of 1900 and 1902, the bituminous coal miners kept at work and their earnings were largely increased by reason of the decreased supply of anthracite coal, for which bituminous coal had to be substituted. Out of these increased earnings they made large contributions to the support of their members in the anthracite region. When the strikers succeed in winning the support of public opinion, as in the cases just mentioned, they have secured large sums by public subscription.

192. *Situation of the employer under competition.*—The success of the strike depends very largely on the situation of the employer and especially on his relation to other employers in the same industry. The writer has elsewhere stated the employer's situation in discussing the advantages of combinations among employers in dealing with labor as follows:

"One final advantage secured by combination deserves special notice. This is the improved position of the

[1] Frank J. Warne, "The Coal Mine Workers."

manufacturer in dealing with labor. From the manufacturer's standpoint the insistent demand of organized labor for high wages and short hours is equivalent to a demand that the manufacturer should submit to a reduction of this profit. These demands his business training teaches him to resist. Under the system of competition, however, in resisting the demands of his employés, he is placed at a serious disadvantage. For these employés are organized into great unions containing 20,000, 40,000, 90,000 or even 250,000 men, under the control of a single executive board, which secures a united action of the entire membership of the union upon any matter of common interest. Competition in the field of skilled labor has been largely eliminated, and well-organized combination has long since taken its place. These contests between employer and employés are unequal. The manufacturer has pressing obligations to meet by the sale of his product; in order to meet these obligations, he must fill his contracts and hold his customers. His financial position is not strong enough to permit a long continued suspension of his plant. He is hard pressed by competitors who are doing their utmost to persuade his customers away from him. He stands alone, struggling for business with concerns whose hands are against him, as his hands are against all his rivals.

193. *Strong position of the union in negotiating with competitors.*—"To the manufacturer in this situation comes an official of the International Association of Machinists, or of the Amalgamated Association of Iron and Steel Workers, or the Iron Moulders' Union of America, with a peremptory demand for a reduction of hours, or an increase in wages, or the admission of walking delegates to the shop, or the limitation of the number

of apprentices, or the discharge of all non-union men. All or any number of these demands may be made upon the manufacturer; if he refuses a strike is the alternative. His men will walk out at a word from their general officers, and there will be none to take their places.

"The business instincts of the manufacturer lead him to refuse an advance in wages as he would resist an increase in the appraisal of his plant for purpose of taxation. He may feel that his men are receiving high wages—perhaps the proposition is to raise them from $3.50 to $4 per day. He looks upon the proposed reduction in hours as equivalent to a reduction of output, opposed not merely to his own interests, but to those of his employés. A demand that outsiders should dictate the management of his business he regards as effrontery. His judgment is unalterably opposed to granting the demands of the union.

"Each one of his competitors may feel the same way. In the absence of competition, they would unanimously refuse to make the concessions demanded. They would even welcome a strike as offering an opportunity to break the power of the union. They would concentrate their efforts on the plants in which the union was weakest, sending thither all non-union men that could be secured, filling as many orders as possible from these plants, and appealing to the sympathy of their customers to induce them to be patient with the delay involved in breaking the strike. They would collect a large defense fund, scour the country for non-union men, educate unskilled labor into a knowledge of machines and processes, secure the assistance of the courts in protecting non-union men from interference, and, by gradually increasing their working force, they would reopen first one mill and then another. Finally the

reserve funds of the strikers would be exhausted, their courage weakened by such determined resistance, their confidence in their leaders impaired, and the solid wall of their resistance honeycombed with disaffection, until, first singly, and then by hundreds, the strikers would be clamoring for reinstatement on the old terms, the union officials compelled to surrender to save their organization, would concede their defeat and make an abject surrender. Such would be the usual result of general strikes were unanimous action among employers to be secured.

194. *Common action among employers impossible under competition.*—"Under competition, however, such unanimous action is next to impossible to attain. Few employers feel safe in standing out against the union, and thus precipitating a strike, for fear lest some of their competitors should grant the demands, keep their mills running, and get the orders which the strike prevented them from executing or accepting, and in the profits from which, these competitors might find ample compensation for the concessions in wages and hours which had been made to secure this increased business from less complaisant rivals. Especially with the owners of the weaker mills do such considerations have weight. They hasten to take advantage of an opportunity to secure the trade of the best mills, which are usually the last to grant the demands of the strikers. In the strike of the International Association of Machinists, in 1901, a large number of the strikers almost immediately obtained the nine-hour day, but they were most of them employed in the smaller shops, which took this easy, if short-sighted, method to fill their books with orders.

"Combination was, on the foregoing account, greatly desired by manufacturers in order that by its means

the menacing growth of the power of organized labor might be checked, and the manufacturers, freed from the hobbles of mutual distrust and suspicion which competition had fastened upon them, might stand firmly together against what they believed to be the unreasonable demands of the unions." [1]

The necessity of combination in order to resist the demands of organized labor is now generally recognized, and even when employers are not combined in trusts they form associations for mutual protection. Because of their large means, they are able to raise amounts of money far greater than the resources of the strikers. The formation of these associations, as well as the existence of a large number of industrial combinations, has in recent years greatly moderated the demands of organized labor and disposed the labor leaders to adopt the methods of conciliation and compromise.

195. *Collective bargaining better than the strike.*— The method of settling labor disputes by warfare is deplorable; it leads to bad feeling between employers and employés and, as Dr. Warne shows, leads also, in many cases, to violation of law and sometimes to bloodshed. Various kinds of intimidation by strikers to keep outsiders from taking their places are almost invariably employed. Most large strikes are attended with a considerable amount of riot and disorder, many lives are sometimes lost and much property destroyed. The method of collective bargaining is so far superior to that of the strike in the settlement of disputes between employer and employé, that intelligent labor leaders and employers are everywhere seeking to employ it whenever occasion arises. Compulsory arbitration of labor disputes has been frequently advocated to force the contend-

[1] "Trust Finance," E. S. Meade, p. 71.

ing parties together in the interest of the public, but it is far better that this result should be reached by voluntary action of the parties interested than that the state should interfere in settling the terms of the wage contract.

196. *Other activities of trades unions.*—Labor unions are active in improving the condition of their members in other ways than in contests with employers. They have been prominent in advocating labor legislation for the reduction of hours of labor, and for the regulation of child labor and the labor of women. They are responsible for laws prohibiting the payment of wages in store orders, the repeal of laws entitling creditors to attach wages for debt, and many other laws which are calculated to improve the position of the workman. Many unions maintain insurance funds and sick-benefit funds which are of great assistance to their members. Trade unions, when they have monopolized the supply of labor within an industry or a district, restrict the supply of labor, usually by imposing restrictions upon admission to the union, or by limiting the number of apprentices, and sometimes, though infrequently, by imposing such a high standard of excellence as a condition of admission that only a limited number of applicants can measure up to the standard.

197. *Employers' attitude toward the closed shop.*—Labor unions are severely criticised by employers. It is claimed that their efforts to limit the right of a business man to employ whom he wishes and of laborers to work for whom they please, is a violation of the liberty of the employer. Thus Mr. Geo. H. Ellis, president of the United Typothetæ of America in an article on "The Fallacy of the Closed Shop" in which none but union men are to be allowed to work, says:

It is the claim only of him who wishes to establish a monopoly in his particular line to the detriment of the general public. Where would this boasted "land of the free" be to-day had the theory of the "closed shop" been imported by our forefathers? Was not the early settlement of this country itself a protest against the "closed shop" in religion? Has the blood of which we have been so proud deteriorated until we are ready to consider our labor, whether of head or hands, or both, merely a commodity to be bought and sold like the labor of so many oxen? And yet the president of a prominent skilled labor union has said in my presence that he hoped to see the time when labor would be so organized that any employer wanting additional help would send to the union headquarters for so many hours of labor as he would send to the grocers for so many pounds of sugar.[1]

198. *Unreasonable demands of trades unions.*—The lawlessness and tyranny which characterize the administration of strikes, and the unwillingness or the inability of leaders to restrain their members from acts of violence, extending often to arson and murder, constitute the most serious indictment against labor organizations. They are also denounced because of the unreasonable demands which they frequently make upon employers, demands which often take no account of the right of the employer to make a fair return on his investment. An illustration of such demands were the efforts of the United Mine Workers in 1908 to secure from the anthracite operators an advance of wages, a reduction in the hours of labor, a recognition of the principle of the closed shop, and the abolition of the conciliation board, which was established by the strike commission of 1902 and on which both operators and mine workers had equal representation. These demands were made

[1] Geo. H. Ellis, "The Fallacy of the Closed Shop," *Annals of the American Academy of Political and Social Science*, May, 1906.

at a time when business was everywhere depressed and wages were generally being reduced in other occupations, and in spite of the fact that the conciliation board had given general satisfaction, and that conditions in the anthracite industry during the preceding seven years had been generally satisfactory. The employers stood firm against granting these demands and the union withdrew them.

199. *Opposition to labor-saving machinery.*—The limitation of the amount of work which members of the union are allowed to perform is also denounced as interference with industrial progress.

The recent decline of the British manufactures may be attributed more largely to this mistaken policy than to any other single cause. A writer in the London *Times* has shown, in a series of articles on "The Crisis in British Industries" that the "cammy" system has reduced the product of an English trade unionist's work to a point where his labor, once the most profitable in the world, now frequently nets a loss to his employer. It is stated that thirty years ago an English bricklayer would lay 1,200 bricks in a day, now the maximum allowed by the union is 400. Nor is this the only means adopted to effect limitation, for the British unions have refused to allow the introduction of improved machinery, they have adopted stringent rules limiting the hours and rate of its operation, and when these measures were found not to be efficacious have deliberately planned its injury or destruction. In some shops, after the failure of the above means, the disappointed men have committed serious crimes by malicious and persistent interference with the operation through the changing of feeds and speeds, "racking" by reckless running, "forgetting" to lubricate, or the breaking and "losing" of small parts. The defense of the limitation of output on the part of certain unions is that without it the normally average worker would be forced to come up to the standard set by the strongest and most skillful,

and in this way become worn out and useless before his time. If this were proven true, or even well substantiated, it would merit attention and become a proper subject of governmental control. The charge, however, is baseless. . . . Labor unions which embrace this policy of restriction of output as a means of maintaining the status of their trade should reflect that it offers the very greatest stimulus to the invention and perfection of automatic machines which dispense more and more with skilled hand-workers and skilled attendants. In the foundry, for example, molding machines operated by unskilled laborers, or even boys, are fast displacing skilled molders in the lighter class of work and their scope is being continually enlarged.[1]

200. *Most promising field for trade union development.*—It may, in conclusion, be questioned if the trade union as now organized and administered offers the best method of increasing wages. That the activity of the unions has resulted in increasing wages in many cases cannot be doubted. The fear of the strike has been far more successful than the reality of the strike in forcing employers to accede to the demands of organized labor. The influence of organized labor upon wages has, however, I believe, been small compared with the effect of the increasing productivity of labor as a result of the larger use of machinery and the increase of the intelligence of the working classes. The most promising field for trade unions development lies in raising the standard of admission into the union, in making sure that none but sober, reliable and competent men are admitted to membership. This policy has been followed out with conspicuous success by such organizations as the Brotherhood of Locomotive Engineers, who in effect guarantee the efficiency of their members, so

[1] Alexander E. Outerbridge, Jr., *Annals of the American Academy of Political and Social Science*, Nov., 1903.

that railroad companies are glad to employ members of the Brotherhood whenever they can be obtained. If trade unions modified their policy by establishing a monopoly not merely of number but of quality and efficiency, as the railroad brotherhoods have done, it will not be necessary for them to resort to the dangerous methods of the strike in order to enforce their demands. With unions so organized and so constructed, employers will be glad to recognize them and to grant the reasonable requests for higher wages and the conditions of employment.

CHAPTER VI

RENT

201. ***Rent defined.***—Among both the income and expenditures of the Reading Coal and Iron Company which we have selected as the basis of our illustration of distribution, were items variously called rents and royalties. The total of the expenditures for royalties was $458,522.89. The payment on account of rentals appears in the accounts of almost every business. It is of particular importance, therefore, that we should understand how rent payments are fixed and upon what their amount depends.

We may define rent as the amount paid to the owner for the use of some natural resource, such as land or mineral deposits or water power, or for the use of some form of fixed capital, such as a wharf or a building, or, in many cases, for the use of machinery. The amount of rent to be paid in each case is stipulated in a contract known as a lease by which the owner of the thing leased, known as the lessor, agrees to transfer to the tenant or lessee the right to occupy and to use his property in a prescribed way, and for a definite time, on payment by the lessee of a stipulated rent. These contracts are for various terms. A dwelling house is ordinarily rented by the month or year, a farm for three or five years, a railroad sometimes for 999 years. With mining leases the term of the lease frequently extends to the time when the mine shall be exhausted.

202. *Forms of rent payments.*—The payment of rent is made in various ways. Where the property is not destroyed by use, the rent is paid periodically; monthly, quarterly or yearly. In the case of mines, however, the rentals of which are known as royalties, payment is made according to the quantity of mineral extracted, for example, five or ten cents per ton. An illustration of mineral leases is furnished by the transaction by which the United States Steel Corporation acquired control of the iron ore lands in Minnesota owned by the Great Northern Railroad. In November, 1906, a lease was made with the Great Northern, by which the United States Steel Corporation acquired on a royalty basis iron ore deposits containing an estimated amount of 500,000,000 tons of ore. The ore mined by the lessee was to be delivered by the railroad on the Lake Superior docks. The United States Steel Corporation agreed to pay 80 cents per ton for the transportation of the ore and 85 cents per ton as royalty on the ore extracted, this amount to increase 3.4 per cent per ton until 1917. The steel corporation agreed to mine from these ore lands a maximum amount of 750,000 tons in 1907 and thereafter 750,000 tons additional for each succeeding year until the output reaches 8,250,000 tons in 1917. At this time, the royalty paid will be $1.19 per ton, and the total rental paid by the United States Steel Corporation, including 80 cents per ton paid to the railroad for transportation, will be $16,417,500.

Mineral royalties are generally fixed on such a basis as to return, not merely interest to the owner of the mineral property, but also, since his property is exhausted by use, to replace its value to him by the time it is exhausted. In all leases of productive property,

such for example as street railways, provision is made that the lessee shall keep the property in repair and shall replace any part of it which may be worn out. Any improvements or additions which the lessee may make to the lessor's property, in the absence of some stipulation to the contrary in the contract, become the property of the lessor at the expiration of the lease. Farm property is frequently rented on shares, the owner taking a certain percentage of the value of his crop as his rent, usually 50 per cent.

203. *How the amount of rent is determined.*—The amount of rent is determined by the value to the lessee of the productive land whose use is conveyed to him for a term of years. The tenant's or lessee's estimate of the value of the property which he leases depends either upon the satisfaction which he and his family get from using the property, as in the case of a dwelling house, or upon the profit which he can make by the employment of the property which he has rented. The profit depends upon the net value of the produce which can be turned out by the use of the land, or mine, or wharf which is made the subject of the lease contract.

In order to operate a farm, an intending tenant must have the wherewithal to equip it. Farm animals, tools, machinery and seed, or the money to buy these, are necessary, with sufficient funds in addition to support the tenant and his family until he sells his crop. This preliminary expenditure is his investment in the farming business. The amount he invests is his capital, and on that capital he expects a certain rate of return. In addition to this return on his money outlay, he must invest his labor, either the labor of his hands or the labor of supervision, and for his labor he deserves com-

pensation. He also expects, although, as we shall see, his expectation is not often realized, to make something more than wages as his profit. What remains after these payments are met he will pay to the landlord as rent. As a class farm tenants will not pay as rent any more than the surplus over the interest on their capital and the wages of their labor. If a landlord tries to get more than this for his farm, the farm will be unoccupied. The competition of landlords for tenants will prevent their rent from rising above the figure mentioned, and the competition of tenants for farms will prevent rent from falling below this figure.

204. *Agricultural rents.*—It is evident that the more fertile and productive a given farm is, the larger will be the return which the tenant can make from its occupancy and the higher will be the rent paid. The primary causes determining agricultural rent are: (1) fertility of the soil and the equipment of the farm with buildings, drains and fences; (2) prices of the products produced from the farm; (3) the location of the land.

Taking these up in order, we find that in any section where farms are rented, the amounts paid for different farms will vary widely according to their respective equipment. One farm has been carefully cultivated for many years, the fertility of the soil increased by the liberal application of fertilizers, commodious farm buildings erected, fences kept in good repair, and a large expenditure made on ditching and tiling. Another farm, perhaps adjoining the first, has been seriously neglected, its equipment is poor, its fertility is low as result of the failure of the tenant or owner to use the necessary amount of fertilizer. The natural fertility of the first farm was no greater at the outset than that of the second, and yet the rent which will be paid for

the first farm is several times that which the second will command.

At any given time every farmer knows that there is a point beyond which it will not pay him to invest labor and capital upon each acre of land. An investment of five dollars per acre may yield a return of twelve bushels of wheat. Possibly an investment of ten dollars might have resulted in a product of twenty-four bushels. But the crop secured from a single acre of land cannot, at any given time, be made to double indefinitely by doubling the investment of labor and capital. To continue our illustration, suppose that fifteen dollars had been invested upon the given acre of land instead of ten dollars. Then it is probable that the crop would have been increased, but it is not likely that it would have amounted to thirty-six bushels. Suppose the investment of fifteen dollars to yield a crop of thirty bushels. Then the results of investing the three different amounts of capital upon the given acre of land would have been as follows:—

Investment.	Crop.	Average Yield to each Dollar of Labor and Capital.
$5	12 bushels	2.4 bushels
$10	24 bushels	2.4 bushels
$15	30 bushels	2.0 bushels

It is evident that, on the piece of land in question, an investment of fifteen dollars will secure a larger yield than an investment of ten dollars; but that the average yield secured by each dollar of labor and capital is less than it would have been had the investment been limited to ten dollars. It would have been better if the third five-dollar investment had been made upon another piece of land. This is an illustration of the method in which a law of diminishing returns operates in agriculture. As the investment of labor and capital upon an acre of land increases, a point is finally reached beyond which an increased

investment would yield a larger aggregate but a smaller proportionate return. If this were not true, we should continue to raise all our agricultural produce from a few acres of land, and would never have taken the trouble to reduce other fields to a condition suitable for cultivation.

It will be noticed that care was taken to say that the law of diminishing returns is true *at any given time.* In any season, when labor and capital are invested in the cultivation of land, agricultural methods and skill have reached a certain stage of advancement, and will not be materially changed during that season. They are, therefore, relatively fixed; so that the economist can say that, *at any given time*, investments of labor and capital can be carried only to a certain point before they will begin to yield a diminishing return. On the other hand, if we compare one season with another, or compare one period of years with another, no law of diminishing returns may be found to hold true. Scientific agriculture is each year making it possible to invest more capital upon land without encountering a point of diminishing returns. Continuing our illustration, we may suppose that improved methods of cultivation are originated, and that these improvements make it possible to invest fifteen dollars upon each acre of land and to secure an average yield of thirty-six bushels per acre. The law of diminishing returns, therefore, is true *only at a given time.* At one season it is possible to invest only ten or fifteen dollars in cultivating each acre of wheat before arriving at a point of diminishing returns. Improved methods of farming may, however, after a period of years make it possible to invest fifteen or twenty dollars on each acre, and to secure a proportionately increased return. Bearing these considerations in mind, we can state the law of diminishing returns as Professor Marshall has formulated it: "An increase in the capital and labor applied in the cultivation of land causes in general a less than proportionate increase in the amount of produce raised, unless it happens to coincide with an improvement in the arts of agriculture."

We have seen elsewhere that the population of civilized countries is increasing, and is likely to increase for a considerable

time to come. This fact will make it necessary to raise more agricultural products as fast as numbers increase. The law of diminishing returns has sometimes been considered to imply that, when all lands now vacant shall have become occupied, men will secure increased supplies of agricultural products only by applying more and more capital and labor to land that will yield a constantly diminishing return. Such a conclusion is wholly unwarranted. From year to year the progress of agriculture is making it easier than ever before to secure the products of the soil. There is reason for thinking that scientific agriculture is only in its infancy, and that in the future its progress will be much more rapid than in the past.—C. J. Bullock, "Introduction to the Study of Economics," pp. 170–173.

205. *Influence of price on rent.*—The importance of the second factor, namely, the price of the product in determining rent, will readily be perceived. The rent is a certain sum of money deducted from the gross receipts of the farm. These gross receipts represent the quantity of produce multiplied by the amount obtained for each bushel or ton produced. No matter how great the quantity of produce may be, if its price is steadily falling, as the price of wheat fell with few interruptions from 1885 until 1897, the rent paid for the farms which produce this wheat must also decline. During the term of the lease, it is true, the tenant has no remedy for a decline in prices, just as the landlord, during the same term, cannot raise his rents if prices advance. When the lease expires, however, and the question of a new lease is taken up, the decreasing productivity of the farm, as a result of the decline in prices will usually be made the basis of a successful claim for a reduction in rent. On the other hand, an increase in the productivity of a farm due to rising prices or to the location of a factory in the neighbor-

hood, which will make a market for fruits and vegetables, will enable the landlord to obtain an increase in rent.

206. *Location in relation to rent.*—The third determinant of rent, the location of the land, is equally important with the other two. We shall have present occasion to discuss this question in reference to city ground rents, but the location of land is also important in determining agricultural rent. Land in the neighborhood of large cities, for example, commands very large rentals because it can be used for truck farming. The importance of location is, however, diminished by the fact that the railroads in fixing rates upon commodities, endeavor so far as possible to equalize distances so as to place every producer upon an equality of advantage with every other producer of the same goods. The railroads, in other words, whenever the law does not forbid them, charge the same rate for a long haul that they do for a short haul. They do this in order to increase the volume of traffic. By enabling a dairy farmer living one hundred miles away from New York to ship his milk into that city at the same rate as one residing twenty miles away, the volume of milk traffic passing over the road is much increased, and the profits of the railroad are larger than they would be if the rate were increased proportionately with the distance. The cost of transportation has been so greatly reduced during the last thirty years that English grain farmers have been hard pressed in competing for their local markets with grain grown four thousand miles away in Dakota or Minnesota.

207. *The rent of mines.*—The rent of mines is determined by the same factors which fix the rent of agricultural land. The richness of the ore is a controlling

factor. For example, in the Great Northern ore lands above mentioned the rental payments are conditioned upon the ore running 58 per cent in iron content. For any reduction in the richness of the ore below this standard a proportionate reduction must be made in the royalty. The cost of mining, the price of the metal produced from the ore and the distance from the market as bearing upon the cost of transportation, are all factors in fixing the rent of mines. We have here another illustration of the principle that the rental of a productive instrument will be based upon the return which can be made by its use.

208. *Ground rents.*—Ground rents are determined on principles which differ somewhat from those which explain the rent of agricultural land. Land used for building purposes is valued not because of its productivity, but because it offers standing room for buildings which may be rented for business purposes. The rent in each city, therefore, depends upon the income which can be obtained from the building to be erected upon it. This income varies primarily with the location of the building. The largest income can be obtained from stores and office buildings in the central sections of large cities and from apartment houses and hotels on the principal streets. In these sections ground rents are highest. Next comes income from slum properties which pay enormous returns because so many people can be crowded into a small space. Next in order, comes ground in the middle class residential section, and finally suburban sections for suburban residences and factory sites. Within the city, the rents of a particular piece of property are influenced by a variety of considerations, nearly all of which relate to the income to be derived from the use of the property. When

buildings, for example, are to be utilized for retail shops, the value of the location will depend upon the number of people who pass the store.

Retail stores either cluster at the business center or follow out traffic streets. In retailing the buyer necessarily seeks the seller, but since in all forms of trade it is the seller who is anxious to promote business, the retailer facilitates his possible customers by placing his shop where the largest number of them would pass, even though his shop were not there. Here he utilizes his shop windows and signs to draw customers into his shop, the two elements of convenience of location and advertising advantage working hand in hand.[1]

209. *Location of retail stores.*—Upon this subject Mr. R. M. Hurd writes most clearly:

The display of goods is vital for shops, and in order to display goods shade is necessary; hence the side of the street which is shady during the part of the day in which women shop is normally worth from 20 to 40 per cent and occasionally 100 per cent more than the sunny side of the street. The west side of streets running north and south, and the south side of streets running east and west, are shady the greater part of the year from about 12 or 1 o'clock on, permitting a display of goods without fear of fading and rendering the sidewalk agreeable. The greater part of the purchasing in the large shops is done by women of the middle classes, whose household duties prevent them from reaching the shops until after 11 o'clock. The busiest shopping hours are from 11 o'clock to 4 o'clock, many women taking lunch either in the department stores or in restaurants nearby. The women of wealth shop usually in the morning between 11 and 2 o'clock, so that even in their case the west or south side of the street has some advantage of shade. In southern cities where shade is even more important, the relative value of the four corners of two inter-

[1] R. M. Hurd, "Principles of City Land Values," p. 75.

secting business streets is well defined, the southwest corner being the most valuable, the southeast next, the northwest next, and finally the northeast corner. This refers only to retail shopping fronts, the corners having a different order of preference if desired for other purposes, such as hotels or office buildings. It is said that in such northern latitudes as those of St. Petersburg and Montreal the sunny side of the street is more valuable than the shady side, since it attracts the travel in the long winters. In New York some difference can be noted in the tides of foot travel according to the time of the year, but since for eight or nine months of the year the climate is mild, the shops become established on the shady side of the street and whatever travel in winter changes to the sunny side is not sufficient to draw them over.[1]

210. *Other factors determining the value of locations.*—The above illustration shows in detail the factors which influence the value of location for a specified purpose. Other influences operate in other cases. Thus, the value of location for a bank building depends on its situation within the financial district, and, in large cities, near the various exchanges. Stores handling fruit, books, flowers, etc., are mainly located in large cities near ferries and railroad depots, since these articles can be purchased and carried home. Restaurants, saloons and cigar shops are mostly located along the line of evening travel, especially near the theatres. The movement of ground rents is influenced by any cause which influences the earning power of buildings.

The general principle of ground rents is thus correctly stated by a prominent real estate operator in Philadelphia: "As long as these United States grow, and grow they must, just so long will realty in central sections of our large cities increase in value." This is

[1] R. M. Hurd, "Principles of City Land Values," p. 90.

illustrated by the movement of ground rents on Manhattan Island where the increase in population has raised rent, and where the fixed charge upon income caused by excessive rentals which must be paid are responsible for a serious lowering of the standard of living. Taking additional illustrations of this principle from Manhattan Island, the construction of the subway caused a material advance in rents all along its route, and the advance was much greater in the neighborhood of the express stations than near the local stations, the reason being that a larger number of people would use the subway at the express stations.

The construction of street railways, and especially the application of electric motive power to urban transportation, have exercised a profound influence upon ground rents. Rapid transit has scattered population over wide areas, adding value to the outlying sections by rendering them acceptable for residences, and to the central sections by increased traffic. In the districts lying intermediate between the suburbs and central sections, ground rents have generally declined. The new lines of street railways in the suburbs has greatly increased the available supply of land, reducing the value of all competitive land and lowering the average value of residence property. To these low rentals in the outlying sections, however, has to be added the cost of street railway transportation, so that the reduction is not so great as would otherwise appear.

211. *Building rentals.*—When we understand the principles determining ground rents, we also understand those which determine building rents. The owner of the building is in the same position as the owner of the land. (In fact, in the United States, the same person usually owns both the building and land.) He

wishes to get as large a return as possible on his investment. On the other hand, the tenant has the choice of a number of properties. If the building is to be used for business purposes, the amount the tenant will pay will depend upon what he can earn in the store or that office, and will increase, as we have seen, with the earning power of the location. Many other factors, however, influence building rentals, such as the willingness of the landlord to make repairs, the presence or absence of an elevator, the appearance and interior fittings of buildings, the ventilation, the amount of light which the rooms receive, the convenience of the building for manufacturing or retailing—all these are factors which determine the amount of rent. The most important consideration, however, to which all these are subordinate, is the location of the building.

212. *Economic rent.*—In this discussion we have treated rent from the standpoint of the landlord, as a form of investment on which he desires to get as large a return as possible, and from the standpoint of the tenant, as a business or personal responsibility for which he wishes to get the largest possible return in income or comfort. Economists have generally discussed the subject in a somewhat different way, treating the rent of a piece of land, for example, as the excess of its earning power over the earning power of the poorest piece of land of equal extent cultivated for the same market. This they term "no-rent land." According to this view, the owners of labor and capital, since they would otherwise be obliged to resort to the poorest land will pay to the owners of the better grades, the difference between the yield of no-rent land and the land which they rent. We shall have occasion to con-

sider this theory in our discussion of the single tax on land values.[1]

If all land had the same properties, if it were unlimited in quantity, and uniform in quality, no charge could be made for its use, unless where it possessed peculiar advantages of situation. It is only, then, because land is not unlimited in quantity and uniform in quality, and because in the progress of population, land of an inferior quality, or less advantageously situated, is called into cultivation, that rent is ever paid for the use of it. When in the progress of society, land of the second degree of fertility is taken into cultivation, rent immediately commences on that of the first quality, and the amount of that rent will depend on the difference in the quality of these two portions of land.

When land of the third quality is taken into cultivation, rent immediately commences on the second, and it is regulated as before, by the difference in their productive powers. At the same time, the rent of the first quality will rise, for that must always be above the rent of the second, by the difference between the produce which they yield with a given quantity of capital and labor. With every step in the progress of population, which shall oblige a country to have recourse to land of a worse quality, to enable it to raise its supply of food, rent, on all the more fertile land, will rise.

Thus, suppose land—Nos. 1, 2, 3—to yield, with an equal employment of capital and labor, a net produce of 100, 90, and 80 quarters of corn. In a new country, where there is an abundance of fertile land compared with the population, and where therefore it is only necessary to cultivate No. 1, the whole net produce will belong to the cultivator, and will be the profits of the stock which he advances. As soon as population had so far increased as to make it necessary to cultivate No. 2, from which ninety quarters only can be obtained after supporting the laborers, rent would commence on No. 1; for either there must be two

[1] The reader will find the theory of economic rent elaborated in John Stuart Mills' "Political Economy."

rates of profit on agricultural capital, or ten quarters, or the value of ten quarters must be withdrawn from the produce of No. 1, for some other purpose. Whether the proprietor of the land, or any other person, cultivated No. 1, these ten quarters would equally constitute rent; for the cultivator of No. 2 would get the same result with his capital, whether he cultivated No. 1, paying ten quarters for rent, or continued to cultivate No. 2, paying no rent. In the same manner it might be shown that when No. 3 is brought into cultivation, the rent of No. 2 must be ten quarters, or the value of ten quarters, whilst the rent of No. 1 would rise to twenty quarters; for the cultivator of No. 3 would have the same profits whether he paid twenty quarters for the rent of No. 1, ten quarters for the rent of No. 2, or cultivated No. 3 free of all rent.—David Ricardo, "Principles of Political Economy," Chapter II.

CHAPTER VII

INTEREST

213. *Interest universal.*—Referring again to the statement of the income and expenditures of the Philadelphia and Reading Coal and Iron Company, we find the sum of $85,455.38 set down as fixed charges and taxes. Most of this sum represents interest. In the income column we also find an item of interest and dividends. Most large corporations both receive and pay interest, and the interest charges of the majority absorb the largest portion of their earnings after the payment of wages. There are few business men who do not have interest to pay as one of their regular disbursements. Interest is as universal a phenomenon of the business world as is wages.

214. *Why interest is paid.*—From the standpoint of the borrower, the object of paying interest is to secure control of present funds because these are exchangeable for capital goods, for natural agents, and for labor. The object in securing control of these productive agents is to combine them in the productive process to produce other goods for the market. By making this combination, the producer increases their utility, makes them more desirable to the purchaser, and raises the price which will be paid for them. The process of production, in other words, creates a sum of value which appears in the form of current funds received by the producer in the price of his product, or the rate received

for his services, out of which the various payments which we have discussed are made.

215. *Interest paid for money.*—The practice of borrowing and lending capital is in common use, but before the borrower can get control of capital, that is, of production goods, he must first get control of a particular form of capital—money or funds—which he may exchange, not merely for production goods, but for labor and natural agents, franchises and other indispensable aids to production.

Interest has been defined as the amount paid for the use of money. This definition is not strictly correct. In our discussion of credit we have seen that what the bank lends or sells is not money in a sense of gold and token money, but money and credit both. Money and credit may be included under the head of funds. We may change the definition of interest, therefore, and say that it is the price for the use of funds. This modified definition is still incorrect. The bank does not borrow the notes of its customers, it buys these notes. What it gives in exchange, moreover, becomes actual property of the borrower. In one celebrated instance the cashier of a failed Florida bank who had received money the day before the failure from two depositors, giving them credit at the time in their pass books, was arrested at the instance of the depositors, who alleged that he had taken their money and refused on demand to give it back to them. The offending cashier was indicted, placed on trial, and convicted in the lower court, but the decision was reversed on the ground that the depositor had exchanged his money for the promise of the bank to pay him money on demand, in other words, for the credit of the bank, and had therefore lost all title to the money.

216. *Interest and discount identical.*—The business of banking is, therefore, a business of buying and selling. We shall, however, continue to use the terms borrowing and lending now that we understand exactly what they mean. The customer of the bank buys money or funds, and he pays for these funds with his promise to pay money at a future time. He buys $985, delivered to him immediately over the bank's counter, if he desires it, and he gives in exchange a promise to pay $1,000 three months from date. The difference between the money which he receives and the amount which he promises to pay is interest. Interest may be defined, therefore, as the discount at which promises to pay money in the future can be exchanged for present funds. This definition will be found to explain not only bank loans, where this truth is made apparent in the term discount, but also those cases where the full amount borrowed is delivered to the borrower at the time the loan is made.

Take the case of a loan made on mortgage security, for example. Here a farmer borrows $5,000 at 6 per cent for five years from January 1, 1913, and he receives $5,000 down in cash. In return, he gives his promise to pay $5,000 in 1918. In this case, as in the case of bank discount, $5,000 of present funds are purchased with the promise to pay back the sum of $6,500 at various dates in the future.

217. *Forms of security for loans.*—In order to insure the keeping of these promises by the debtor, the creditor usually demands that the borrower enter into a supplementary contract of security. It is true that if the obligation is not met when due, the creditor can sue the debtor, and can obtain judgment against him, have the debtor's property seized by order of the court, and sold

up to the amount necessary to satisfy his claim. An additional contract of security is, however, usually demanded.

Security contracts have been defined as agreements by which the borrower obtains a favorable judgment as to his willingness and ability to pay, which favorable judgment, in the absence of such a supplementary contract, would be lacking. These contracts of security are in various forms: first, endorsement by a third party who writes his name on the back of the note and thereby promises to pay the note if the borrower fails to pay it when due. In order to hold the endorser, it is necessary for the lender, immediately after the time of payment expires, to make public declaration of this fact through a notary public and to notify the endorser.

218. *The mortgage.*—The second form of security is the mortgage. A mortgage is an instrument by which certain property is conveyed in trust to the creditor or his representative. In the case of the pledge of real property, such as a house or a railroad as security for a loan, the property remains in the possession of the debtor, and the trust does not become active unless interest or principal is not paid when due. The nature of this grant appears in the following extract from a mortgage issued by a steamship company to secure an issue of bonds.

That for the purpose of securing the payment of the principal and interest of each and all of said bonds at any time outstanding under the authority aforesaid, . . . the said transportation company has . . . conveyed, confirmed, assigned, transferred and set over . . . unto said trustee, their successor or successors and assigns, forever, all the following described real and personal property, estates, rights, privileges and appurtenances. . . . To have and to hold, all and

singular said property, real, personal and mixed, together with the appurtenances thereof, unto the said Trustee . . . but IN TRUST nevertheless, for the equal and proportionate benefit and security of all present and future holders of bonds and interest coupons issued under and secured by this indenture, and for the enforcement of the payment of said bonds and interest when payable according to the tenor, purpose and effect thereof.

The advantage of this conveyance to the creditor is that the property named in the mortgage is set apart as the security for his obligation, and no lien or encumbrance can be placed upon this property which will rank ahead of his own. In case interest or principal is not paid, therefore, the creditor has certain property which is set aside for his protection which can be levied upon after he has proven his claim in court.

219. *Collateral security.*—Collateral security is also frequently demanded. In this form of security contract, some kind of property, usually shares of stock or corporation notes, or warehouse "receipts" certifying to the ownership of wheat or cotton or coffee, are put in the actual possession of the creditor under an instrument authorizing him, in case the interest or principal is not paid, to sell the property at public or private sale without giving notice to the debtor, to pay the debt out of the proceeds of the sale, and to return any balance to the debtor. In collateral and mortgage contracts of security, the transaction reduced to its lowest terms is as follows: The debtor appoints the creditor or his representative, his (the debtor's) trustee, and authorizes the trustee to discharge his obligation in case the debtor cannot pay. To enable the trustee to carry out the terms of his trust, certain property is conveyed to him which he is authorized to sell, pay the debt and return the balance to the debtor.

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The advantage of this conveyance to the creditor is that the property named in the mortgage is set apart as the security for his obligation, and no lien or encumbrance can be placed upon this property which will rank ahead of his own. In case interest or principal is not paid, therefore, the creditor has certain property which is set aside for his protection which can be levied upon after he has proven his claim in court.

219. *Collateral security.*—Collateral security is also frequently demanded. In this form of security contract, some kind of property, usually shares of stock or corporation notes, or warehouse "receipts" certifying to the ownership of wheat or cotton or coffee, are put in the actual possession of the creditor under an instrument authorizing him, in case the interest or principal is not paid, to sell the property at public or private sale without giving notice to the debtor, to pay the debt out of the proceeds of the sale, and to return any balance to the debtor. In collateral and mortgage contracts of security, the transaction reduced to its lowest terms is as follows: The debtor appoints the creditor or his representative, his (the debtor's) trustee, and authorizes the trustee to discharge his obligation in case the debtor cannot pay. To enable the trustee to carry out the terms of his trust, certain property is conveyed to him which he is authorized to sell, pay the debt and return the balance to the debtor.

220. *Classes of loans.*—The discount on the sale of promises to pay money in the future, which we term interest, is expressed in the form of a certain rate per cent on the sum named in the contract to pay money. This may vary from 40 or 50 per cent a year to 1½ and 2 per cent according to conditions. What now are these conditions? Upon what does the rate of interest depend? In order to answer this question, we must first distinguish between classes of loans. Loans may be divided into two general classes, short time loans and loans for long periods. Under short time loans we have, first, call loans, where the borrower promises to pay whenever requested by the lender; and, second, loans for periods less than a year—three, four and six months. Call loans are usually made in connection with the purchase of stocks and bonds. Since we do not intend to go into this subject in detail, it need detain us no longer than to state that the low rate of interest usually charged on these loans, is explained by the fact that they are usually secured by ample collateral, and that they are payable on demand, so that banks may invest their surplus funds in this class of loans with the certainty that should opportunity arise for making loans at higher rates of interest, the funds loaned on call will be immediately available.

221. *Short time commercial loans.*—Short time loans for periods of two to three and four months, are of great importance in the conduct of business. Most of these notes are offered to the banks by men engaged in active business who have money coming to them in the future on account of goods sold, but who have present expenses to meet for labor, materials, interest, taxes, etc. In order to obtain funds for these immediate needs, they exchange their promises to pay money in the future

for the right to draw immediately against the bank, and they arrange that the promissory notes which they sell to the bank shall mature after money is due to be paid to them to an amount equal to the face of the notes. This transaction is called borrowing in anticipation of accounts and bills receivable.

These loans are made in two forms, either the note of the borrower is purchased or the bank buys the claims against the borrower's own debtors expressed in the form of drafts or promissory notes. In the second case the borrower guarantees that the promises to pay which have been executed to him and which he has sold to the bank, will be promptly paid to the bank when due. In the United States it is customary for merchants and manufacturers to borrow on their own notes to obtain the funds to carry on their business. In England, on the other hand, it is customary, as it formerly was in this country, for the seller to exact either a promissory note or an accepted draft from the buyer, which can be sold to the bank with the guarantee of the seller. The English system, while not popular in the United States, is generally considered to be a more conservative method of doing business. In England banks, as a rule, purchase accepted drafts, to pay which two responsible persons are obligated who have each received value on account of the transactions in which the notes originate.

222. *Long time loans.*—Long time loans may be divided into three classes; first, loans on real estate security; second, corporate bonds; and third, public bonds. There are other classes of long time bonds, but they are of minor importance. The purpose of loans on real estate security is usually the improvement or extension of farm or city property or the enlargement of the borrower's business. Corporation borrowing is ef-

fected by the sale of similar notes usually issued in denominations of $500 and $1,000 to an aggregate amount in some cases reaching from $50,000,000 to $100,000,000. These notes are called bonds. They are secured by a mortgage on the property of the corporation, either its physical property or other stocks and bonds which it owns. This property is conveyed in trust to the trustee, usually a trust company, who acts in behalf of the creditors. We have already had an illustration of such a conveyance.

Bonds bear interest at a certain rate per cent on the principal, which is paid to the holder in quarterly or semi-annual installments. The bonds are sold to investors in various amounts, and in this way a large amount of money can be placed at the service of a corporation. Bonds are usually issued by corporations for great works of permanent improvement, such as the construction of a railroad or the purchase of cars and locomotives, or the enlargement of a terminal. If the judgment of the borrowing corporation has been correct, the earnings of the company, as a result of the investment of the proceeds of these bonds, will be increased sufficiently to pay the interest, and, if repayment of the principal is desired, to accumulate a sum sufficient to pay the loan at maturity. The corporation also expects to show a profit over the amount of the interest and the sum set aside to repay the principal.

The term of these corporate bonds varies with the nature of the business in which the money is to be invested. Where the borrowing company owns a large amount of real property, or where it has a monopoly of a certain business—as, for example, a street railway or a gas company—or when its earnings have been large and stable for a number of years, long term bonds,

running sometimes one hundred years, can be readily sold. In the case of a manufacturing company, however, such as a paper company or meat packing company, where the position of the business is not very well assured, the assets of comparatively small value, and the earnings irregular, the term of bonds is much shorter. Bonds of such corporations do not extend more than ten or twenty years, since the lender is unwilling to risk his money for a longer period.

223. *Public bonds.*—Public bonds are the obligations of nations, states, counties, townships and municipalities. These bonds are issued to obtain funds for war, public improvements or for other public purposes. The security of national and state bonds is the faith and credit of the issuing government; in case of default in the payment of principal or interest, the creditor has no right to sue. In case of county, township and municipal bonds, however, the creditor, in case of default, has the right to sue and can obtain judgment against the debtor. These public corporations are regularly organized by the state, and the state holds them to rigid account for their obligations. No property, even in these cases, is specifically pledged to secure the loans.

224. *The investor.*—Long term obligations are purchased by a class of lenders known as investors. The investor is either an individual, a firm or corporation. The object of the investor in lending money for a long period is to receive an assured and stable income during that period, and if he can be sure of his income, he does not care for the repayment of the principal. In case he requires, for other purposes, the money which he has expended in the purchase of a long term obligation, he can, without difficulty, find some other investor who will purchase this obligation from him and can thus obtain

a return of the money invested. The largest investors in the United States are the savings banks and insurance companies. These receive the savings of millions of people, giving in return either a small rate of interest with a promise to return the principal, or, in the case of insurance companies, giving a guarantee that, in consideration of certain regular payments by the holder of the guarantee, the company will pay him, his heirs or assigns a stipulated sum in the event of death, fire, shipwreck, theft or other contingencies. Both savings banks and insurance companies lend most of the money placed in their hands to corporations and municipalities. Most of their purchases are of bonds. They also invest largely in real estate mortgages. These purchases are made at prices which will return more than the amount which they must pay, either as interest or as a return of principal or in satisfaction of loans resulting from insurance risks.

225. *Rates of interest on loans.*—Corresponding to these various loans, we have a variety of rates of interest. Call loans in New York, for example, secured by marketable stocks or bonds, have been made at as low a rate as 1 per cent; short time mercantile loans with an endorser usually bring from 3½ to 5 per cent; loans on the security of farm mortgages 5 and 6 per cent; the best class of municipal bonds 3½ to 4 per cent; railroad bonds 3½ to 4½ per cent; bonds of manufacturing and mining companies 5 to 6 per cent; loans on improved city real estate 4 to 5 per cent; and government bonds 1¾ to 2½ per cent.

The rate of interest paid by the corporation on notes sold to the investor depends, not on the rate named in the instrument, but on the price obtained. For example, 4 per cent bonds may be so desirable, in the

opinion of the investor, as to command a price of 110, in which case the corporation would be borrowing at less than 4 per cent because, while it gave to the bond buyer, who is the lender, a promise to pay him $40 a year for twenty years and $1,000, the amount of the original loan, at the end of that period, it receives $1,100 for the promise. The investor is buying an income of $40 a year when he buys a 4 per cent bond. According to his opinion of the security of the income, and the certainty that his principal will be returned to him, will be the price which he will pay for this income. He may pay $1,100 for $40 a year, or he may not pay more than $800 for the same income, plus the right to receive back the amount of his loan at the date of maturity.

226. *Causes determining the rate of interest.*—Upon what does the present price of promises to pay money in the future depend? It depends upon the supply of promises to pay money of a given class, compared with the demand for bonds or notes of that class. All funds in the present are of equal value to the borrower, but all promises to pay money at a future time are not equally esteemed by the lender. One thousand dollars is the same to the farmer in Western Kansas who offers a mortgage on his semi-arid land, as it is to the government of the United States, which offers to the lender the best security in the world, but the farmer's promise to pay is not esteemed as highly as that of the government.

The various classes of promises to pay money at a future time may be arranged in a descending series according to their reputation and esteem among investors. At the top stand government bonds, which bear the lowest rates of interest; then come call loans, then short time commercial loans, following in order

come municipal bonds, railroad bonds, bonds of public service corporations, such as gas and electric lighting companies; farm mortgages, industrial bonds and mining bonds. This list includes most of the loans with which business men are familiar. As we come down in the scale, the demand for loans weakens. A smaller amount of money is offered for these bonds. In order to sell them, their price must be fixed at a moderate figure and their rates of interest raised. The lower the price at which the promise to pay a given sum of money in the future can be sold, the higher is the rate of interest on the loan which the sale of a promise represents. The rate of interest is, therefore, fixed in the same way as are the prices of commodities, by a comparison of the supply with the demand. As the supply of a given class of loans increases, assuming that the demand remains stationary, the rate of interest will rise. On the other hand, the supply of United States government bonds is almost stationary and the demand has been increasing for a number of years; as a result the rate of interest on government bonds has been decreasing for many years. Says Professor Bullock:

The payment of interest for a loan of capital is not explained by simply showing that capital serves to increase production, to improve the quality of the product, and to secure products that would be unattainable otherwise. If men would be willing, without receiving interest, to accumulate enough capital to carry on the business of the world, then no one could secure interest. But this is something that cannot be expected. If a person has $1,000, he can expend it for consumers' goods that are available immediately. If he invests it in capital, he can secure a return only after some time has elapsed. When he invests $1,000 in productive capital, he converts a present available income into such a form that it is available only in the future.

Now, persons will not exchange a present income of $1,000 for a future income of only $1,000. This is for two principal reasons: *First*, the future is always more or less uncertain, and "a bird in the hand is worth two in the bush." *Second*, even when the uncertainty and risk of the future are reduced to a minimum, most persons underestimate or undervalue future pleasures and pains. But many people are willing to invest $1,000 of income in capital so that it will be unavailable for a year, in return for $1,050 at the end of that period. The $50 premium would be interest in this case. It would be a premium added to the principal of the loan, available only at the end of the year, in order to make it equivalent to a present income of $1,000. Interest is paid, therefore, as a premium to equalize future goods or future income with present goods or income, in the estimation of possible investors. Capital formation implies a willingness to invest present income in producers' goods that are available only in the future. Interest is the inducement necessary to insure the formation of enough capital to meet the needs of business.

Capital may be furnished by three classes of persons. *First*, it may come from rich persons with large incomes, who can easily save large amounts of income and invest them in capital. *Second*, it may be supplied by persons of moderate means who wish to provide for the future, and would do so even at very low rates of interest. Both of these classes of investors do not require large premiums in order to induce them to convert part of their present incomes into capital. In the *third* place, we have marginal investors, who will furnish more or less capital according to the inducements offered for its investment. These may be wealthy persons, or may be people of moderate means, who would save and invest a portion of their incomes even at low rates of interest. But they will save more, and furnish more capital, if the premium offered for investments is high.

The demand for productive capital comes from all the industries that are needed to meet the wants of the society. The demand will be large in proportion to the energy and enterprise of the population in all branches of economic activity. In the

second place, the demand will be stimulated by the natural opportunities offered for favorable investments. Both of these causes have made the demand for capital very active in the United States.

The rate of interest is really the rate of annual income that will equalize future income with present in the minds of those persons who furnish the *marginal* portion of the supply of capital needed to meet the demands of the business of a society. In other words, we have merely another case of the equalization of the supply and the demand through changes in price—in this case "price" meaning the premium offered for future goods or income. Prices of commodities must be high enough to enable the marginal investors of capital to secure a premium, a rate of interest, that will induce them to furnish the amount of capital required.

227. *Bases of classification of loans.*—There are several causes which explain these differences in the desirability of various classes of loans. First and most important is the difference in security. Double-name paper is better than single-name paper because of the double responsibility which the endorsement gives. Double-name paper secured by collateral is still better because of the additional property securing it. The bonds of a large city are usually much safer than the bonds of a small town. The bonds of a railroad company which earns $5,000,000 more than the amount required to pay its interest charges are more desirable than the bonds of a company that only earns $500,000 above its interest charges. A mortgage on an Oklahoma farm is usually regarded as less secure than an Iowa farm mortgage.

The second reason for valuing some loans higher than others is the different esteem attaching to different loans altogether aside from the security which they

carry. Government bonds, therefore, appeal to many persons who have no confidence in railroad first mortgage bonds, although the bonds of some railroad companies are fully as secure as the bonds of the United States government. In fact, for a considerable period of our history, the bonds of the Pennsylvania Railroad Company were more secure—since they were payable in gold—than the bonds of the United States government, which were payable in dollars, the definition of the dollar until 1900 being somewhat uncertain. Railroad bonds, in turn, are familiar to more people than are mining bonds and the percentage of loss in railroad investments is very much less than in mining investments. Railroad bonds are, therefore, in the greater demand. Notes secured by real estate mortgages are popular among the ultra conservative investors who wish to have security for their money any time they desire.

In general, however, it will be found that the investor has established the correct order of security in the rank to which he assigns different bonds. The bonds of some governments, such as Venezuela or Colombia, it is true, may be less secure than the bonds of some mining companies, such as the Reading Coal and Iron Company, but, on the average, the percentage of loss which the investor has sustained by purchasing government bonds is very small compared with the losses incurred by those who have purchased the bonds of mining companies. The gradation of investments upon which depends the amount of money seeking investment in each class, is based therefore directly upon the difference in security as between the different classes.

228. *Changes in interest rates.*—We have finally to discuss the differences in the rates of interest on given

loans at different times. This question can best be considered in relation to bank loans. When the country is prosperous and business men generally are making money, the demand for loan funds is strong and the supply of promises to pay money is large. At such periods, when prices are rising, every one is anxious to get hold of funds in order to purchase production goods and hire labor and engage in or enlarge production. The purchaser of pig iron, for example, sees that the price of his product is advancing. He knows that if he can buy material and hire labor he can buy the iron at $14 per ton and sell it for $22 to $25 per ton. Most producers, when prices are rising, are in the same position. Merchants see a chance in the general prosperity of the wage earners and the farmers to enlarge their sales if they can increase their stock. Every business man endeavors at such a time, therefore, to procure ready money by selling his promise to pay money in the future. The more anxious he is to obtain money down, the larger the profit he expects from the employment of the funds, the lower is the price at which he will sell his promise to pay; in other words, the higher is the rate of interest which he will pay the lender. At such periods, the banks rapidly increase their loans and their deposits, and their profits are very large.

We have seen that the necessity of keeping a definite percentage or cash reserve fixes a limit beyond which, in the issue of their promises to pay, banks may not go. The result is that within a short time after prices have begun to advance, the demand for loan funds increases more rapidly than the supply, and the rates of interest rise. The further this movement is continued, the more anxious are borrowers to obtain ready money, and the

smaller is the margin within which the banks can expand their credit to sell to borrowers.

229. *Limitations to the expansion of bank credit.*— This condition of rising prices and rising interest rates after a longer or shorter period, and after many fluctuations of prices and interest rates, is finally reversed, and prices and interest begin to fall. The banks finally reach a point where they cannot extend their credit further. Business men borrow for two reasons; either to buy or to keep from selling. When, therefore, the banks refuse to extend additional credit because they cannot otherwise keep within the provisions of the law which requires them to maintain at all times a certain percentage of cash reserve against their demand liabilities, a certain amount of the demand for commodities is withdrawn, those business men who have been carrying large stocks of goods or securities on borrowed money in anticipation of a rise in price, are required to repay some of their loans. The demand for commodities and securities as a result of the curtailment of bank credit is, therefore, decreased, and the supply of commodities and securities enlarged. As a result, prices fall. Falling prices reduce profits; business men curtail their operations, and in time the rate of interest, which was high during a period of advancing prices, falls to low figures and remains on a low level as a result of the decreased demand for loan funds, until prosperity returns and prices again move upward.

We may say, therefore, that the rate of interest on bank loans moves with the prices of commodities and securities, rising as they rise and falling as they fall. The same explanation applies to fluctuations in the rates of interest on other classes of loans. These are given in detail in the volume on INVESTMENT AND SPECULATION.

CHAPTER VIII

PROFITS

230.—*How profits are calculated.*—The final share in distribution is called profits. The operating profits of any business may be calculated by the following formula:

(Gross receipts)—[(wages and cost of materials)+(depreciation + repairs + interest + taxes)] = profits.

In the case that we have under observation, the Philadelphia and Reading Coal and Iron Company, out of $35,733,652.85 resulting from sales and other sources of income the profits amounted to only $171,575.65.

It is evident that the profits of business are much smaller than is commonly supposed. After a manufacturer pays his wages and supply bills, lays aside 10 per cent of the cost of his plant to offset its deterioration, pays his interest, allows interest on his own money invested in the business, and allows himself finally a proper compensation for his own services, he is extremely fortunate if anything remains in the way of profits.

231. *The farmer's profits.*—A large amount of what is commonly termed profits should be included under some of these categories. A farmer invests $5,000 in a farm of one hundred acres. He hires one hand at $200 per year and board; he pays $250 for farm and house supplies during the year; he pays $50 taxes and $100 for other expenses, making his total expenses $600. He sells his crops, cattle and hogs for $1,200. He believes, and properly believes, that he has done very

well on the year's work, for he has $600 clear in bank, but can he show any profit?

He must first allow for interest on his $5,000 at 5 per cent, or $250. Then his property has depreciated to some extent during the year; his barn, for example, is one year nearer to the time when it must be painted and re-shingled, the same may be said of his house and other buildings; his machinery is not so good as it was at the first of the year; some of his fields will need the application of fertilizer. To offset his expenses, he may have some colts and calves which may have increased in value during the year, but when every allowance has been made, a charge of 2½ per cent for depreciation on the cost of his plant is no more than sufficient to offset its depreciation in value. Depreciation, then, counts for $125 more, leaving $225 remaining. Most farmers would consider this as their profit, but this assumption is incorrect. An allowance must be made for his labor on the farm, and the labor of his wife in the garden and dairy. Surely he is worth twice as much as he pays his hired man. Allowing him $400 as wages and adding the cost of his family's living during the year to the $225 remaining, after his interest and depreciation have been paid, and taking no account of his wife's labor, his receipts will nearly balance his expenditures, and he will find that no profit has been earned.

This case is exceptional only in regard to the amount of money that the farmer has on hand at the end of the year. Few farmers can show such an amount clear in the bank. The amount of farm profits, as distinct from wages and interest, is surprisingly small. After a series of years, taking good and bad seasons together, profits in agriculture have been small.

232. *Manufacturing and railroad profits.*—It is the same in manufacturing profits. The depreciation charges should here never be less than 10 or 15 per cent. The cost of wages and supplies is proportionately higher and the profits on the average in any of the manufacturing businesses are small. Even the railroads, which are commonly supposed, as we have seen, to be among the most profitable of industries, show a small actual profit on the investment. The total gross earnings of American railways during the year 1910 were $2,750,000,000. Out of this the expense of operation, including wages, supplies and taxes, amounted to $1,822,000,000; interest and rentals $567,853,000; and dividends $283,411,000. There remained only 10 per cent of these gross earnings available as profits, and when we consider that the stock on which these dividends were paid had been bought, much of it, at high prices by the owners and represents their investments, and after we deduct the proper allowance for interest on this investment, it is safe to say that railway companies show very small profits. In fact, many companies, depreciation being considered, are running behind.

233. *Profits difficult to make.*—Furthermore, in estimating the profits of business, no account is taken of the losses. It is a well known fact that 90 per cent of all men who enter business fail at some time in their business career. The majority of the large corporations in the United States have been at some time bankrupt. If the losses of business could be averaged against the profits, it would clearly appear that the average business man is fortunate if he secures fair wages of superintendence and a moderate return on his capital investment.

Particularly are profits difficult to make under con-

ditions of competition. Competition implies the sale of the same commodity by independent producers to the same buyers. Each seller tries to get as high a price as he can. In our discussion of prices, we saw that he always keeps in mind the cost of production and that he will not, unless forced by necessity, go below this figure. On the other hand, it must be remembered that he will sell his goods below the cost of production rather than let them remain idle, or allow his plant to run at less than its full capacity.

234. *Effect of high prices.*—Suppose, for example, that pig iron costs $14 per ton to produce, including in the cost of production the cost of material, wages, interest, depreciation and taxes. As long as the demand for iron is sufficient to take all the amount produced at the price of $20 per ton, there is a very large profit in its production, but this profit encourages the producers to extend their works. This attracts others into the industry. The supply of iron increases, and in order to sell, prices must be lowered. The price may fall to $19, to $17, to $16 and even to $15 before the mills which are the most expensive to operate will close or even reduce their production. Even then, the price may go on falling, if the other mills, whose cost of production has not yet been reached, will make up the deficiency and maintain the supply. The decline in price will continue until the supply is reduced. If the demand is sustained, the curtailment of supply will cause prices to rise again, until one mill after another is started, but, save in exceptional circumstances, the price will not go much above cost at the poorest mills, and may even remain below that figure for long periods. No producer will run his mills when he is not earning expenses. In this estimate of expenses, however, he

considers, as a rule, merely the interest which he has to pay, and his other outgoings for materials and wages. He will, in case of necessity, disregard altogether the return on the money which he has invested on his own account, and in extreme cases, he will even sell at prices which do not represent more than a part of the interest charges on each unit of his output. In some cases he is likely to conclude that it is better to earn a balance on his fixed charges and keep his mill going than not to earn any of them and close it down. If his mill is closed, interest goes on just the same as though it were open, his working force is broken up and his customers are lost, and his business is in danger of ruin. The producer, unless absolutely forced to suspend, will, therefore, continue to operate his plant so long as the returns from sales exceed the amount paid for wages, materials and repairs.

235. *How profits are made.*—Although it must be conceded that profits are difficult to earn, we know, nevertheless, that enormous profits have been received, a fact which is testified to by the large fortunes which have been made by producers. There is one man in the United States whose fortune is said to be $500,000,000. There are a number of people whose fortunes reach from $20,000,000 to $50,000,000. There are over two thousand individuals in the United States whose fortunes consist of $1,000,000. These large accumulations of wealth have, for the most part, been accumulated out of the profits of industry. How then have these profits been made? We may distinguish five sources of profits: (1) Appreciation of land or other natural resources; (2) superior ability; (3) extraordinary and abnormal demand for the product; (4) speculation; (5) monopoly.

236. *Appreciation of property.*—Many of the great fortunes of America have been the result of the shrewd buying of some natural resource. The immense wealth of the Girard estate is mainly due to the appreciation in the value of the anthracite coal lands, purchased at low prices one hundred years ago by Stephen Girard. The wealth of the Astor family came from persistent buying, through four generations, of New York real estate, which has steadily grown in value. A large part of the Hill fortune came from the far-sighted policy of Mr. James Hill in buying iron ore lands in Minnesota. These instances could be indefinitely multiplied. Nearly every great American fortune has been increased, if not entirely created, by the growth in value of the various products which the possessors of these fortunes have had the foresight to purchase when their values were low.

237. *Superior ability as a source of profits.*—In the great majority of cases, the large profits of industry have been the result of superior ability. We have seen that most business men do not make profits; a few men do make them. The primary reason for this distinction is that the few are more liberally endowed with brains than the many. They understand their business better. They are better able to take advantage of opportunities for profits as these are presented.

The Carnegie Steel Company is the most conspicuous illustration of manufacturing success and enormous profits. These profits are largely the results of brains. This company started with a small forge and machine shop nearly forty years ago, and its stock and bonds were sold in 1901 for nearly $500,000,000, practically all of which represents the accumulation of profits. These profits were earned because of superior ability,

displayed in the management of the business. Their ability was displayed in the following forms: (1) in re-investing the greater part of the earnings of the business in enlarging the plant; (2) in purchasing the best machinery no matter what it cost, and in discarding any appliance for which a better substitute could be had so as to reduce costs of production to the lowest possible figures; (3) in giving superintendents and foremen an interest in the business so as to insure their loyalty and zeal; (4) in producing their own raw material so that when the price of steel rose they had no profits to pay to the iron and coal miners; (5) in equipping their business to run at lowest cost by operating their plants at full capacity, crushing many of their weaker competitors and capturing their market. The writer has elsewhere described the advantages of the Carnegie Steel Company as follows:[1]

238. *Advantages of the Carnegie Steel Company.*— "The Carnegie Steel Company owned the most complete, the best-equipped, and the best-managed steel plant in the United States. The perfection of its equipment in point of independent supplies of materials and transportation service has been already described. No one of its rivals was worthy to be compared with it in point of self-sufficiency of production. This equipment supplied ore and fuel to the mills which were grouped so closely about Pittsburgh that the president of the company was able to visit some department of each mill on successive days. The Edgar Thompson furnaces and mills were at Bessemer, two miles from Pittsburgh; the Duquesne furnaces and mills, four miles from Pittsburgh; and the Homestead Steel Works, one mile from the city. Besides these larger works, there were located

[1] E. S. Meade, "Trust Finance," p. 207.

in, or immediately adjoining the city, the upper and lower Union Mills, the Carrie and Lucy Furnaces, and the Howard Axle Works. All these plants were connected by the Union Railway, with thirty-nine miles of track, which in turn connected with the Pittsburgh, Bessemer and Lake Erie Railroad to the north. This arrangement of mines, coke ovens, and mills was the most favorable that could have been devised for economical production.

"The mills of the Carnegie Steel Company were concentrated at the point of largest present advantage, where materials could be most easily assembled, and from which the largest markets could be most easily reached. It was this fact of concentration even more than their superior facilities which gave the Carnegie Steel Company their most pronounced advantage.

239. *Superior equipment in machinery and men.*— "The advantages of the Carnegie Company did not stop here. Their mechanical equipment was superior to that of any other mills, and their business was the best managed of any in the country. The superior equipment of the Carnegie works was the result of a policy of large expenditure upon betterments persistently pursued for many years. "Every new process and every new machine which would in any way increase the efficiency, reduce the cost, and improve the product of the Carnegie Company has been adopted, until this great concern has raised the physical condition of its mills to a point which is unsurpassed." Dividends had never been considered by the management. Improvement had been the one thing thought of. During the years 1898 and 1899, the Carnegie Company expended out of earnings upon new construction and betterments no less a sum than $20,000,000.

"The increased earning power here represented was clear gain. No deductions had to be made for interest payments. The policy of the Carnegie Company was purely industrial. Financial considerations had little weight. Its shares were never in the market. The greater part of its profits was each year invested in the plant. As Mr. Carnegie remarked, he and his partners knew little about the manufacture of stocks and bonds. They were only conversant with the manufacture of steel.

"The management of the Carnegie Steel Company represented the acme of productive efficiency. Every officer had risen from the ranks by dint of compelling merit. Every head of a department had an interest in the business apart from his salary. Trade unionism had been banished from the mills in 1892, and the workmen were spurred on by high wages and the promise of advancement. No visitor to the Carnegie mills could fail to be impressed with the intensity of the effort and the strained attention evident in every department. None but the strongest could stand the terrific pace. Breakdowns were frequent at thirty-five, men were old at forty-five. The famous 'iron-clad agreement,' it has been claimed, was designed to dispense peaceably with partners who had outlived their usefulness. Not only was money lavishly spent on salaries and wages, but large sums were paid for information. The result of these advantages and this policy appeared in the revelations of the Carnegie-Frick controversy, when the plaintiff claimed that the total profits of the company for 1898–'99 exceeded $70,000,000."

Every one of the competitors of the Carnegie Steel Company could have done these things if they had known how, in which case there would have been small profits

for every one, and prices would have been much lower than they actually were. Because the Carnegie Steel Company for many years employed the best brains in the steel industry, they were able to produce at lower cost than their competitors, and since they did not supply the entire demand of the market, the price remained at such a figure that they kept their plants at work. This price, however, left the Carnegie Company a large margin of profit which as we have seen was invested in the business. Similar illustrations of profits received from superior brains are furnished by every business. The man with superior ability may sell at the same price as his competitors, but he buys cheaper and sells in larger quantities. He recognizes that the highest paid labor is the cheapest, that liberal advertising pays, and that up-to-date machinery is a necessity. He is alert to take advantage of every opportunity. As a result he succeeds.

It is useless to decry the great American fortunes as the result of railway discrimination, extortion, oppression of labor, monopoly, etc., etc. They are, with hardly an exception, the result of superior ability. We may criticise some of the methods, for example, of Mr. Rockefeller and his Standard Oil associates, in making large profits out of railway rebates, but we cannot deny that at the outset each one of Mr. Rockefeller's competitors had the same opportunity to take this advantage of the railroads that he had, nor that his remarkable success shows conclusively his greater skill at the game of business.

240. *Extraordinary demand for the product a source of profit.*—Profits are made by nearly all producers during seasons of extraordinary demand, which come at intervals to every industry. The hard coal strike dur-

ing 1902 illustrated this, when the demand for bituminous coal resulted in large profits to the soft coal operators. The iron and steel manufacturers made large profits during 1906–1907. The United States Steel Corporation in 1906 earned 20 per cent of its inflated common stock. As a result of large purchases of equipment by railways during that period the manufacturers of railway equipment made large profits. When the short crop of wheat in Europe coincides with the full crop here, American wheat growers prosper.

As we saw in a previous section, costs of production do not change as rapidly as prices, and the result is that occasionally every producer has an opportunity to make large profits. If he invests these profits in his own business or some other profitable business he will improve his financial position. If, however, as the majority of business men do, he considers these profits as available for his personal expenditures, or in cases of corporations, if their directors distribute most of their profits in dividends to stockholders, assuming that they represent a permanent income, instead of viewing them in their true light, as occasional and temporary gains, neither the individual nor the corporation will be benefited.

241. *Speculation as a source of profits.*—The third method by which profits are made is by speculation. By this term we mean the buying of commodities, or stocks, or land with the expectation of making a profit from the increase in its value. A large part, perhaps the greater part, of American speculation is carried on with money borrowed from the banks on the security of the things purchased. This fact enables a speculator with $10,000 of his own to purchase one thousand shares of stock selling at $100 per share. He puts in his $10,000, and

his broker borrows for him $90,000 more, giving as security the stock purchased. If the stock advances $10 per share, the speculator doubles his money. The same method is employed in grain, coffee or cotton operations, and also in speculating in real estate.

There are numerous instances of great profits being made in speculation. For example, the foundation of P. D. Armour's fortune was made by speculation in pork. The foundation of the Rockefeller fortune was laid by speculation in oil lands. To perhaps ninety-nine men out of every hundred, speculation, aside from the risks which every one must take in his own business, is sure, if persisted in, to result in heavy losses. The losses in speculation are far greater than the gains. It is true that inside interests in many large corporations having advance information as to dividend charges or consolidations, favorable or unfavorable to competition, may, with perfect safety, buy or sell the stock affected and make large profits. In the re-capitalization of enterprises for sale to the public in the form of stocks and bonds, large gains are also made by the syndicate which financed the trusts. The United States Steel Corporation syndicate, for example, is reported to have cleared 100 per cent on an investment of $25,000,000. Even in the stock market, where the risks of loss are commensurate with the chances of profit, the great fortunes of Gould, Keene, Widener, and many other wealthy men, show that speculation is often the road to wealth. These men speculated, however, from inside knowledge. They were in a position to know what would happen to the companies in whose stocks they speculated in the way of dividend payments or consolidations, and on the basis of this certain knowledge they could not fail to profit in most of their operations.

Large fortunes have also been made out of political influence, which is frequently purchased, and as a result of which valuable franchises and privileges have been obtained for a nominal consideration. These methods, however, while available to the few, are unavailable to the majority of producers. The number of men who have been ruined by taking chances for large profits, in other words, by speculation, is enormously greater than those who have profited by this method.

242. *Monopoly as a source of profits.*—The fourth method by which profits have been made is by obtaining a position of monopoly advantage. Monopoly has already been defined as control of supply so that demand has a larger influence upon prices than under competition. There can be no question that if a monopoly position can be obtained it is the surest and safest way to earn large profits, and these profits will be received in good years as well as in bad years.

The first form of monopoly is the monopoly of ability. If a producer takes care that he is the best posted man on his line of trade, and furthermore, that his assistants are second only to himself in their information concerning his business; if he ensures their enthusiastic fidelity and interest by liberal salaries and by giving them a share of the profits in addition; if he ensures the best work by paying the best wages, he is in a fair way to secure the monopoly of brains in his business, and to profit accordingly.

Monopoly profits have never been looked upon with favor in the United States. Even the suspicion that they were being enjoyed has sufficed often to disturb the conditions which made them possible, either because consumers have combined to boycott the monopolized good or because the government has interfered. Under such circumstances it has been but natural for

monopolists to devise numerous expedients for concealing their real earnings.

The most common expedient of all for concealing profits is the practice of inflating the capitalization of the corporation. Where a business is organized by shrewd men who foresee its monopolistic possibilities, it is usual to start with a grossly inflated capitalization. In the railway business, for example, it has not been unusual to secure all of the capital required by the sale of bonds and to distribute the stock as a pure bonus. Industrial combinations as organized in the United States accomplish the same result by putting out preferred stock equivalent to the actual capital invested in the business and an equal or even larger amount of common stock as a bonus. In these and other ways the nominal capital of an enterprise may be made from the first, two, three or even five or ten times the amount actually invested in it. Such an arrangement permits directors to distribute very large profits as dividends on the nominal capital without exceeding the ordinary rate of interest.

It often happens, even when large monopoly earnings are anticipated, that the nominal capitalization is not made large enough to conceal them. In such cases, and in the more usual cases in which actual and nominal capitalization start together, the practice of "watering" stock to conceal excessive earnings is frequently resorted to. This consists simply in issuing new stock for which no equivalent investment is required. It may be accomplished by means of a stock dividend, each shareholder being given an amount of new stock proportional to his original holding; or by the issue of new stock for subscription at a nominal price, subscriptions being open only to shareholders, directors or other favored investors. By these means the nominal capitalization may be expanded to keep pace with earnings and to permit the distribution of the latter without any apparent increase in the dividend rate.—H. R. Seager, "Economics: Briefer Course," pp. 146–7.

243. *Monopoly of large industries.*—The second kind of monopoly is the monopoly of large industries. This

is illustrated by the recent combinations of industries, which are called trusts, which brought together a large number of industries under a single control. Other examples are furnished by any business in which a great amount of capital has been intelligently invested, so that it has obtained the advantage of a large scale of production. The advantages of the large producer are considerable. He gets the best men and best equipment. The large producer buys cheaper, and he sells at less expense than his small competitors. He makes a more efficient disposition of the by-products of his business. He can spend more money in improvements. He does more business as compared with his competitors and, therefore, at lower cost. The cost of production to the large producer is not merely lower than to his smaller competitors, but because his prices are controlled, the average price obtained is higher, and under competition there are not so many violent fluctuations. Monopoly prices do not rise so high as under competition and do not fall so low. The prices are, therefore, higher than under competitive conditions. Large business organizations, it is expected, will eventually control most branches of production in the United States. These organizations, either because of their size, or agreements between them, can be more easily effected, as they are few in n umber, have many of the advantages of monopoly.

244. *Franchises and patents.*—The third form of monopoly is the legal monopoly of a franchise or a patent. A franchise is the right to use public property for business purposes, as, for example, to use the streets of a city for street railway tracks. These grants, being for most purposes exclusive, are in large cities enormously profitable since they have usually been given without compensation. One street railway company in

Philadelphia, for example, pays 72 per cent dividends on its stock and others pay from 25 to 40 per cent. In recent years, however, there has been evident a growing disposition on the part of the public to exact suitable compensation from the holders of franchises, and to make these grants only for short periods, thus greatly limiting the profits which can be made from this source. A patent is an exclusive right granted by the United States government to the inventor of a useful machine or process, to make and sell his invention for a term of seventeen years. Large fortunes have been made from patents but the original inventors have made less than those who purchased their inventions, and only a small percentage of the patents granted prove to be valuable.

245. *Monopoly of quality.*—The fourth and last form of monopoly is open to every producer. It is the monopoly of quality. Many manufacturers are thriving and making large amounts of money to-day because they are producers of specialties, which are protected either by patents or by special knowledge in which, therefore, there is no competition, and which they can sell at a price which gives a liberal margin of profit. The advertising pages of every magazine are full of examples of this kind of monopoly. Royal Baking Powder, Shredded Wheat Biscuit, the Elgin Watch and the Victor Talking Machine are instances in point. Enormous fortunes have been made out of this monopoly of quality. This form of monopoly is also built up by skillful advertising. Every year, in the United States, more than one billion dollars is spent in advertising. In various ways, there is built up, as a result of this vast expenditure, in the minds of the buyer, an association between his wants and the article advertised. When he thinks of shoes, the names Regal and Douglas are sug-

gested; of hats, Knox or Stetson; of collars, the Arrow Brand, and so on. This form of monopoly, next to the monopoly of a franchise, is the most enduring and the most profitable. To an increasing extent producers are coming to rely upon advertising to establish their business on the enduring foundation of the association of ideas.

Specialization in manufacturing in order to obtain such a position of monopoly advantage is open to every one. Ceaseless study and constant attention to the production of some one thing, coupled with good business judgment, will, in time, place the producer in a position of monopoly advantage but his monopoly will be one of quality and distinctiveness. If protected by patents and backed by advertising, this form of monopoly is likely to prove more permanently profitable than any other form.

CHAPTER IX

TAXATION

246. *Functions of government.*—The fourth share in distribution, with an examination of which we will conclude Part III of this book, is the share which the state takes in taxes. In the accounts of every corporation appear payments for this item. Every property holder in the United States contributes to the support of the state. Furthermore, owing to their purchases of commodities which are taxed by the United States government, it can be said that every man, woman and child in the United States pays taxes.

Before considering the principles which govern the assessment of the different kinds of taxes, we must ascertain the reason for the payment of taxes. Taxes are necessary to provide for the support of the different divisions of government. The functions of the government are twofold; first, to secure to each individual the enjoyment of all the privileges consistent with the enjoyment of similar privileges by others; and second, to further the welfare of its citizens.

Under the first heading, we include what are known as the negative functions of the government, and under the second the positive functions. Examples of the negative functions of the government are the protection of society against criminals, the establishment and enforcement of regulations governing the transfer of property; the inspection of foods and buildings to ensure purity and safety; the isolation of cases of in-

fectious diseases; the laws regulating the collection of debts, and the regulation of railway rates and fares. In each of these functions, it will be observed that the government does no more than to protect the citizen against injury and injustice from his fellows.

The positive functions of government include two classes of services, (1) those which the government performs because it is the government, and whose expenses the individual must pay whether he will or not; and (2) those services which the government performs as a business corporation, and of which the citizen may avail himself or not as he chooses. Examples of the first class are the construction of roads, streets, sewers, the improvement of rivers and harbors, the coining and issuing of money, protection against fire, the care of the sick, poor and infirm, and the maintenance of free schools. These services are paid for out of the revenue of the state, and are rendered gratuitously to the individual who profits by them. Examples of the second class of services which may be called the industrial services of government, are the transmission of mails, the furnishing by municipalities of light, heat, water and power, the provision for education where payment is required, the conduct of savings banks, and the transmission of telegraph messages. The payment for these services is made voluntarily by the individual to whom the services are rendered. These payments are known as fees or prices as distinguished from taxes which we have presently to define.

247. *Taxes defined.*—All the negative functions of government, and the first class of positive functions, are supported from the proceeds of taxes. A tax may be defined as "a general compulsory contribution levied upon persons, natural or corporate, under the authority

of the public power." The most significant feature of the tax is its compulsory character. The citizen must pay, no matter what may be his individual opinion as to the justice of the tax imposed upon him. This compulsory character of taxation is so generally emphasized that most persons lose sight of the fact that, considered from another standpoint, the tax is a payment by the citizen for numerous and important benefits conferred upon him by the state. We have only to contrast what our condition would be under a state of anarchy or no-government, with what it is under an orderly and well-established government, to see that the sacrifices which men would make in order to provide a stable government far exceed the sacrifice actually involved in the payment of taxes.

248. *Basis of taxation.*—The basis of taxation is the ability of the individual to pay taxes. The government needs revenue, and it taxes the individual according to his ability to pay, as the easiest method of obtaining the funds it requires. It is true, however, that the benefit which the individual receives from the activities of the state depend upon the amount of property that he enjoys, and we would not be incorrect in saying, therefore, that taxes are not only based upon the ability to pay, but also upon the benefits derived from the government which is supported by the taxes.

249. *Maxims of taxation.*—The maxims of taxation are as follows:

(1) Taxation should be levied according to the respective ability of the taxpayer.

(2) Taxes should be certain and not arbitrary. "The time of payment, the manner of payment, the quantity to be paid ought to be clear and plain to the contributor and to every other person."

(3) Every tax ought to be levied "at the time or in the manner in which it is most likely to be convenient for the contributor to pay."

(4) The expense of collecting taxes should be as low as possible.

(5) Taxes should above all other things be adequate to the needs of government. The worst taxes are justified under this maxim by the plea of public necessity.

(6) A tax system should be elastic, so that its yields may be increased or diminished as the necessity of the government requires.

(7) Taxation should be levied in such a way so as to interfere as little as possible with the industrial activities of the nation.

250. *Forms of taxation.*—We have next to consider the forms of taxation, and to examine the most important examples under each form. Taxes may be generally divided into direct and indirect taxes. Direct taxes are those levied upon the individual who is expected ultimately to pay them. Indirect taxes are levied either upon commodities or individuals as producers in the expectation that the person who advances the tax, for example, the manufacturer of cigars, will be able to shift the burden in whole or in part upon others.

251. *Advantages of direct taxation.*—The advantages of direct taxes are as follows: (1) Their yield may be more certainly calculated than in the case of indirect taxes, because they will be paid by one person upon whom they are levied; and (2) they can be more easily and cheaply collected. Their disadvantages are: (1) Their unpopularity, since the average individual is opposed to the payment of taxes; and (2) the danger of

fraud and deception in the declaration of the amount of property or income upon which the tax is based.

252. *Advantages of indirect taxation.*—The advantages of indirect taxation are: (1) Because its burden is concealed, owing to the fact that it appears in the price of commodities, and because the consumer, as we have before shown, does not understand in what way prices are fixed. Indirect taxes, for example, on sugar and tobacco, are paid by the consumer little by little as he purchases these commodities, and the burden of payment is not perceived. (2) Indirect taxation makes it possible to reach the tax-paying capacity of the middle and lower classes who have no property, and whose income consists of their wages or salaries. Their capacity cannot be reached by direct taxation, but they can be made to pay indirect taxes on their daily consumption.

The disadvantages of indirect taxation are: (1) The yield of indirect taxes cannot be accurately calculated, in view of the fact that the amount of retail purchases of taxed articles is a fluctuating quantity. (2) Indirect taxes cost more to collect, owing to the fact that they are collected throughout the year, while direct taxes are collected within a short time; and furthermore, a large corps of officials is necessary in the collection of indirect taxes to make sure that dutiable articles do not escape the tax. (3) Indirect taxes are objectionable because they seriously interfere with industry. Industries whose products are taxed must be carried on so as to facilitate, as far as possible, the collection of taxes rather than with sole reference to economical production.

253. *General property tax.*—Taking up now the special forms of direct taxation we have the general property tax. The basis of assessment of this tax is the real and personal property owned by the taxpayer.

The tax is paid out of the income of the taxpayer and forms a lien on his property. In the United States the general property tax is usually employed in systems of state and local taxation. For state purposes, the tax is assessed among the counties according to their respective property valuations, and county taxes are usually assessed in the same way among the townships. These taxes are collected by elected assessors, who ascertain "the full cash value of real and personal property," and, if necessary, obtain a declaration of the value of his property from the taxpayer.

The objections to the general property tax are as follows: (1) Lack of uniformity of assessment. This applies particularly to state taxes, which are assessed, as we have seen, upon the counties according to their respective property valuations. Each county tries to make its valuation as low as possible in order to reduce its contribution to the share of the expenses of the state. (2) Lack of unformity in the assessment of different kinds of property; real estate and visible property are usually assessed at higher rates than stocks, bonds and other forms of property which are not visible, and the existence of which may be concealed by the taxpayer. It is a well known fact that men with large political influence are taxed in many places on a lower basis of valuation than the average man can obtain. Furthermore, under the general property tax, the houses of the poorer class, being assessed at their selling valuation, are necessarily assessed at a higher rate than the house of the rich, which as a rule will sell but for a fraction of the money which has been invested in them. The general property tax exempts from taxation all incomes connected with property, as for example, professional salaries. (3) The evil of double taxation is general. Few states allow any

deduction upon the property of debtors. The result is the debtor is taxed twice, both on what he has, and on what he owes.

The only argument which can be advanced in support of the general property tax is that it now occupies the field, and that it would be difficult to change it. Some of the most radical defects in the administration of the taxes can be done away with. Thus it has been found that the evils of competitive undervaluation may be avoided by allowing the expenses of the state to be paid by a tax on one form of property, such as personal property, and the expenses of the locality from the tax on real estate. Inequality of assessment as between individuals may be remedied by giving publicity to the assessment, and by making the assessor appointive instead of elective. Even when everything possible has been done, however, to improve the administration of the general property tax, it still remains a very objectionable form of imposition.

254. *Income tax.*—The income tax assesses the taxpayer upon the basis of his ability to pay as evidenced by his income. Its advantages are: (1) It is based directly upon the ability of the taxpayer; (2) it cannot be shifted, since it is not levied upon commodities whose price can be raised, but upon persons; (3) if the principle of stoppage at the source is adopted, by which is meant the collection of the income before it reaches the hands of the recipient, as for example, the payment of the income by a corporation for its stockholders, evasion of the income tax by falsification can be made extremely difficult. (4) The income tax reaches income which is not connected with corresponding amounts of property. (5) Income taxation is more equal than any form of indirect taxation. Indirect taxation unduly burdens the

poorer classes who may consume as large a quantity of taxable commodities as their wealthier neighbors, but whose tax-paying ability as based upon their income is much smaller. Under the income tax, however, the poorer class will pay little or nothing to the state while the tax burdens of the wealthy would be barely according to their ability. (6) The sixth advantage of the income tax is its elasticity. It responds quickly to any change in the rate of assessment.

The objections to the income tax are: (1) the inquisition into the private affairs of the taxpayers which it necessitates, and which renders this form of taxation very unpopular; (2) the fact that temporary income derived from business or professions which terminate with the life of the recipients and which are the result of their personal exertions are taxed at the same rate as incomes from land and property which are permanent and which do not depend upon the efforts of those who receive them.

The income tax is a prominent feature of English taxation, having been introduced in 1842. It was employed in the United States during the Civil War, along with several other kinds of taxes, but it was repealed after the war closed. In 1894, an income tax law was passed which was to apply only to those incomes in excess of $4,000. This law was, however, declared unconstitutional in 1895; in 1913 the constitutionality of an income tax was reaffirmed by an amendment.

255. *Single tax on land values.*—The most prominent advocate of the single tax on land values was Henry George, and his theory of the single tax is treated in his book entitled "Progress and Poverty." This theory is based upon definite assumptions which are as follows: Capital is but a form of labor, therefore, the returns to

capital and labor must always tend to equality. To the employment of labor and capital land and other natural agents are indispensable. This land is of all degrees of productiveness, and when found in towns and cities, it is of all degrees of advantage of location. Under the institutions of private property in land, these natural resources are monopolized. The returns to labor are measured by the product of labor on the most productive lands open to the laborer's free use and occupation. The owners of the better grades of land, therefore, can exact from the laborer all the surplus product after the yield of the lands which are open to free occupation, because they can at any time hire labor at a rate of wages measured by the return of labor on the poorest land cultivated for the market. The same reasoning applies to the return of capital when employed on the better grades of land. It can obtain no higher rate of returns than the capital employed on land not yet monopolized. All the returns of the better lands above the returns on the poorest lands, therefore, go to the landlord. As labor and capital increase their efficiency, since they can find employment nowhere to better advantage than on monopolized lands, the demand for land constantly increases. The result is that all the gains of civilization go to the landlord. All the returns from inventions and improvements, and all the returns from increased productiveness are absorbed by the owner of the natural resources. The consequence is that poverty tends to persist in the midst of advancing wealth, and is most extreme where wealth is most abundant. This argument supplies a fairly accurate statement of the conventional theory of rent, to which reference has been made in our discussion of this subject.

256. *Proposition of the single tax.*—In order that

there may be a fair division of the income of society the single taxer proposes that rents should be confiscated, that all incomes not due to the investment of capital or exertion of labor, should be taken over by the state. The justice of this proposition is defended on the ground that the landlord did not create the value of the land; that this was done for him by society at large, and that, therefore, society can take over that which it has created. This appropriation of rent by the state is to be effected, according to the single taxer, by the imposition of a tax rent which will rise as returns rise and which will substitute the state for the landlord. Other taxes it is proposed to abolish. It is claimed that the single tax would not only provide a revenue sufficient for the requirements of government, but that it would also correct existing inequalities in distribution by turning over to the owners of capital and labor, a large share of the rewards of their labor and saving.

257. *Fiscal objections to the single tax.*—The objections to the single tax may be divided into two classes: (1) Fiscal objections, and (2) economic objections. The first fiscal objection to the single tax is due to its inelasticity. The pecuniary needs of government rise and fall. The rents of land and other natural agents do not change with the same rapidity. As a consequence of this inelasticity, if the single tax were adopted, and if the government lived up to its income, as it usually does, in some years there would be a large deficit, and in other years, a large surplus, a most undesirable condition of affairs. The second objection is that the single tax could not be collected. As applied to ground rents in cities there might be no difficulty. A large part of the value of agricultural land is, however, due to the investment of capital in improvements. It would be

impossible to separate the returns to capital from the returns on "bare lands" and since the single tax proposes to exempt capital from taxation, this tax cannot be collected on farming land.

258. *Economic objections to the single tax.*—The economic objections to the single tax are: (1) poverty is rapidly diminishing in every civilized country, which contradicts the assumption upon which the single tax theory is erected; (2) that wages are paid by an employing class as we have seen, and that the larger the amount of capital seeking investment, the greater the demand for land and labor, which explains the general rise in wages all over the world; (3) a large amount of this increased demand for labor comes from the landlords who do not consume all their own income from rents, but who save and invest a large portion of this in producing capital; (4) the single tax offers only a partial remedy. Land is not the only monopoly, and there are other unearned increments besides rent. The abolition of one form of monopoly, without attacking another, is inconsistent. (5) The final objection to the single tax is that it strikes at the foundation of present economic society by attacking the institution of private property. If the landlord is to be deprived of his land, the owners of all other forms of property will feel insecure in their holdings. The adoption of the single tax would, therefore, be a socialistic measure, and on that account objectionable.

It has been claimed that the tendency of economic progress is to cause a decided increase in rents. In agriculture, it is said, the law of diminishing returns drives producers constantly to cultivate poorer lands. This increases the differential rents secured from better lands. In the case of town lots, it is urged that every increase of population raises rentals in a marked

manner. All such increases of rents, it is thought, are due solely to the growth of society, not to the activity of the particular landowners whose rentals are raised. Hence the expression "the unearned increment" has been applied to this growth of rent produced by social development.

Those who speak of the unearned increment commonly overlook the losses that many landowners suffer. Large sums spent in developing city real estate have been entirely lost, as the enterprises have often proved failures. Changes in the location of street railways or in the movement of fashion or business from one section to another, lower rents in some sections of a city nearly as much as they increase them in another. The development of facilities for rapid transit tends to decrease the demand for city lots for residence purposes. In the case of agricultural lands, rents have been lowered repeatedly over large sections of country. In England, agricultural rents have been lowered greatly by the competition of cheaper wheat, beef, and pork produced in the United States. In the eastern portion of this country agricultural rents have been lowered by the opening up of the wheat lands of the West. Many farms in New England cannot be rented for enough to pay interest on buildings and improvements on the land. If we set off these decreases against the increases of rent that have been caused by social development, the net unearned increment received by landowners, *as a class*, is very much smaller than is usually represented.

Only in the case of landowners who own particularly desirable tracts of land can it be claimed that there is a great unearned increment. Some favored situations in the business centers of cities, some sites available for docks, for terminal facilities for railroads, etc., have become enormously valuable, so that a large unearned increment has been received.—C. J. Bullock, "Introduction to the Study of Economics," pp. 445–6.

259. *The inheritance tax.*—Inheritance taxes are duties imposed upon the succession to property after death. This form of taxation is justified on various grounds: (1) As a socialistic measure to insure the

diffusion of wealth; (2) as a form of income tax—a tax on "fortuitous income," that is, an income tax not collectible during the lifetime of the decedent, and paid for by his successors; (3) the inheritance tax is easily and cheaply collected and cannot be evaded, for it is paid when the estate is administered.

The principles upon which inheritance taxes are levied in various countries are as follows: (1) small estates are exempt; (2) collateral inheritances as by nephews or cousins are taxed at a higher rate than direct inheritance by sons; (3) the principle of progression also applies; in some cases large inheritance being often taxed at a higher rate than small; (4) the only limitation to the rate of inheritance tax is the danger that if the rate is fixed too high, the tax may be evaded by giving away of property before his death.

In the United States at the present time the inheritance tax is enforced in a large number of the states. New York, Connecticut, Massachusetts, New Jersey, Pennsylvania, Ohio, California and Illinois are the most important. This form of taxation has been generally employed in the United States, primarily on account of the failure of the general property tax to reach personal property.

An unequal distribution of wealth must result from the institution of private property so long as individuals and families differ greatly in earning capacity and in prudence and forethought. Where these inequalities are found some individuals and families will enjoy large incomes, and out of these incomes will set aside for investment large savings, while others will accumulate little or nothing. In some families wealth and the qualities necessary to its preservation will become hereditary, and great fortunes will be passed on from parents to children through several generations. More frequently, if we may judge

from the experience of the United States up to the present time, the wealth accumulated in one generation will be gradually dissipated, either through division among numerous heirs or because those who inherit it lack either the capacity or inclination to keep it unimpaired.

Undesirable as are inequalities in wealth, direct attempts to limit wealth accumulation would, in the author's opinion, be productive of more harm than good. A large and growing fund of capital is indispensable to the maintenance of efficient methods of production and no measures should be adopted that are likely to weaken seriously the motives to saving and investment. The reasons for putting no check on an individual's right to accumulate wealth do not apply, however, to his right to transmit it at death to his heirs. Even though hereditary fortunes may be dissipated after a few generations, it is nevertheless true that much of the wealth in existence at any one time has been inherited by those who own it. Limitations on inheritance by means of inheritance taxes are, therefore, effective means of lessening inequalities in wealth among the individuals in each oncoming generation.

Of all forms of taxation, inheritance taxes are believed to be the least objectionable. They are easily assessed and collected. They cannot be shifted, but must be paid out of the inheritances on which they are intended to fall. Finally, they impose a minimum burden upon taxpayers, since after they are established they soon come to be thought of as reasonable charges imposed by the state for its services in protecting property and seeing that it passes into the possession of the legal heirs. For these reasons, as well as because they tend to lessen inequalities in wealth, large use should, in the opinion of the author, be made of these taxes as sources of revenue. The experience of other countries indicates that the best results are secured when inheritance taxes are made progressive. Small inheritances should be exempt from the tax. On larger inheritances the rate of taxation should increase by gradual steps until on large fortunes it becomes a substantial deduction, one-fifth or even one-quarter, from the inheritance. If the large revenues that may

be derived from this source are used to advance the interests of the poor and thus lessen inequalities in fortune at the other extreme, steady progress may be made toward a more democratic distribution of wealth and welfare.—H. R. Seager, "Economics: Briefer Course," pp. 458–460.

260. *Excise duties.*—There are two general classes of indirect taxes, (1) excise duties and (2) customs. Excise duties are taxes levied upon commodities destined for consumption. They may be either levied with the primary intention of producing revenues, as in the case of the tobacco tax, or to regulate consumption, as in the system of liquor licenses.

The methods employed in excise taxation are three: stamps, licenses and monopoly. According to the first method, the tax is paid on each unit of consumption, and the payment of the tax is attested by the stamp certificate. The license is the payment for the privilege of sale of an article which it is desired to tax. The privilege of selling liquor is generally obtained in this way in the United States. The third method of taxation is the method of monopoly, as illustrated by the monopoly of tobacco in France, and the salt monopoly of India.

Excise duties should be levied upon as few articles as possible. These articles should be luxuries and articles in great demand. They should also be articles whose processes of making are simple and uniform. It is not desirable to tax the necessities of life, but a large revenue can be obtained by the tax on luxuries. Furthermore, since excise taxes interfere with industry, they should be limited as much as possible, and should be applied to the smallest possible number of industries.

261. *Customs.*—Customs are taxes levied upon commodities when they cross national boundary lines or are

admitted within a customs territory consisting of a combination of countries, or of different parts of the country. The purpose of customs duties is (1) revenue, and (2) the regulation of industry. A tax for revenue should be levied according to principles similar to those requiring excise taxation. The tariff for revenue should fall upon as few articles as possible. Luxuries should be taxed at a higher rate than necessities; customs duties should be imposed so as to interfere as little as possible with productive industries, and to this end also the taxation of raw materials should be avoided. The rate of taxation should be fixed at the point which will produce the largest revenue to the state, the legislator keeping in mind that high prices diminish consumption, and low prices increase it. When duties are levied upon articles that are largely produced in the country laying the tax, excise taxes should also be levied in order that the state may derive full benefit from the tax.

Customs duties may be either specific or ad valorem. Specific duties are levied by a fixed standard, as by the yard or pound; ad valorem by the articles. Specific duties are more easily and cheaply collected, but are open to the objection that they bear more heavily upon the cheaper grades of articles which weigh as much as the more expensive varieties. Ad valorem duties, on the other hand, are open to the objection that they offer large inducement to fraudulent valuation by the importer. In practice specific duties are generally levied on cheaper, coarser articles and ad valorem duties on the more expensive grades.

262. *The ideal system of taxation.*—The ideal tax system should maintain a proper balance between direct and indirect taxes. The foundation of the tax system should properly be indirect taxes, because these will

reach the tax-paying capacity of the majority, much better than direct taxes. In addition to the indirect taxes, however, there should be a large element of direct taxes in order to levy the heaviest burdens upon those who are most able to pay high taxes, and in order to introduce an element of elasticity into the public revenue.

PART IV: ECONOMIC PROBLEMS

CHAPTER I

RAILROAD PROBLEM

263. *Transportation a factor in our national economic life.*—The importance of transportation as a factor in our national economic life cannot be over-emphasized. To say that the steel bands connecting the Pacific with the Atlantic, the Gulf with the Lakes, are the great arteries of the nation by which its life blood circulates, is no overdrawn figure of speech. The United States as it now exists, with its vast domains and rapidly developing resources, would be an impossibility without its great transportation system. It is generally agreed that our present civilization could not have been attained except through the division of labor and it is equally true that the principle of the division of labor could never have been applied on other than the meagerest lines had it not been for the growth of transportation.

264. *Development of the railroad system.*—The discussion in this chapter will be on but one form of transportation—the railroad. It is at present by far the most important form and also the only one that has given rise to any serious problems. One cannot have a comprehensive grasp of the present railroad problem without at least a bird's-eye view of their past development, as many of the evils of the railroads evolved out of the nature of their growth. The age of the railroad was ushered in in this country in 1830, when

the first railroad—the Baltimore and Ohio—was opened for traffic. During the next decade the railroads were short local lines. During the period 1840 to 1870 many new roads were built and the process of "linear consolidation"—the linking together of local companies into through trunk lines—began. Before the close of this period, the New York Central and the Pennsylvania had affected through connections with Chicago. The Central and Union Pacific railways had connected the eastern roads with the Pacific Ocean.

The next period is that between 1870 and 1890, when there was an unparalleled expansion of the railway mileage of the country from 52,000 to 160,000 miles, more than 200 per cent. In this period new routes were completed between the Atlantic seaboard and Chicago which resulted in a period of destructive competition which in turn led to discriminations and rebating in through traffic and the overcharging of local noncompetitive traffic—two evils later to be dealt with by law. The railroads in this early stage sought to restrain competition by the creation of pools and traffic agreements which also later became the subject of legislation.

The last period of railroad history, 1890 to the present time, has been characterized by an unprecedented amount of consolidation and combination among competing roads, until a number of men small enough to sit about a common table control the administrative machinery of the railway system of America—a system greater in extent than all the railways of Europe combined.

265. *The railroad a form of monopoly.*—One cannot understand the real nature of the railroad problem unless he keeps two points clearly in mind. First, that the railroad by the nature of its organization is a monopoly

and must always be recognized as such, and second, that selling transportation is not analogous to selling ordinary commodities.

The railroad is a monopoly because it is a business of "diminishing expense," that is, its expense of operation materially decreases with its growth in business. Every railroad requires a large initial outlay of capital for roadbed, terminal facilities, rolling stock and the like. These expenditures must be made regardless of the volume of its traffic. For every additional hundredweight of freight carried, the pro rata expense is reduced. Such being the case, one can at least understand the motive which prompts the railroad traffic managers to go after additional freight at lower rates than those customary, or to offer lower rates to the large shipper than to the small. He is merely applying a practice common to all the business world.

266. *The railroad is quasi-public in nature.*—This leads to the second point which one must keep in mind, viz.: that selling transportation differs from selling ordinary commodities. Two reasons explain the difference: first, the fact that the railroad corporation has always stood in a different relation to the state from that of ordinary business corporations; and second, the fact that public welfare compels us to view railroading in a different light from other economic activities.

A word is necessary to make clear each of these reasons. The state has always fostered railroad building. Constantly the state delegates to railroad corporations its own immemorial right of "eminent domain." If the state had not freely conferred this right on railroad corporations, the present American transportation system would have been an impossibility. Moreover, American railroads from the earliest times have received

state aid in regard to their finances. There are no less than nineteen states which have advanced funds of considerable amounts for railroad construction. Some of them contracted debts amounting to no less than $30,000,000 for the benefit of various railroads. In addition, the national government has from time to time made large grants of land from the public domain amounting in all to no less than 100,000,000 acres of land. There is no parallel to this degree of state aid in any of the other economic activities of the people.

Aside from this state aid aspect of the subject, the supreme necessity for national welfare and common justice make it impossible to accept any other theory than that railroading, unlike ordinary business, is peculiarly amenable to public regulation. The necessity of the case prevents us from allowing the railroad to sell its product as it chooses. Such a theory would place in the hands of a few private citizens almost absolute control of commerce, give them a taxing power over the public, equal to, if not in excess of, the taxing power of the government itself, and would allow a group of individuals, through this power, the opportunity to say which sections of the country shall prosper and which shall not, which individuals shall be allowed to amass fortunes and which shall be doomed to poverty. To escape from the evils of such a condition the state imposes on the railroad two broad restrictions which do not apply to business of a strictly private nature. First, charges (rates) must be reasonable; and second, the railroads shall be open to all persons, whether they be large or small dealers, on equal terms.

267. *The problem of discrimination.*—The problem of discrimination includes some of the most serious phases of the general railroad problem. Outside of

the question of whether the traffic manager is willfully violating the law, the adjustment of rates between commodities and between places is a problem of no small magnitude and one which requires nothing less than expert knowledge to solve. Discriminations may be of three kinds, viz.: between persons, between places and between commodities. A discrimination between persons occurs when one shipper gets some special privilege not afforded to his competitor. It may be in the form of secretly low rates, direct rebates, or in the ability to get all the cars wanted, while his competitor is denied them on one pretext or another. Whatever the plan, it is a form of special privilege and inevitably results in the failure of the man discriminated against. Competition is so keen in business to-day that no man can long compete against one who can get his goods to market more cheaply. To make the situation more grave, the man discriminated against is usually the small shipper, the one, if any, who can least afford to pay the higher rate.

Discrimination between places is a problem which is constantly arising. In many ways its effects are more far-reaching than the class of discriminations just discussed. Two cities or two districts may be producers of similar products which are sold in competition in one market. A rate discriminating in favor of the one district means that it shall prosper and gain control of the market in question. Its merchants will grow wealthy while those of its rivals languish and their business dwindles. A case at issue at the present time is that of the respective cement rates obtained by Jersey City and Philadelphia on cement coming from the Northampton district. Jersey City enjoys a rate of eighty cents per ton of two thousand pounds. The rate

to Philadelphia is $1.35 per ton in car loads of fifty thousand pounds minimum per car except when the capacity of the car is less, when the actual capacity governs. Under this system of rates Philadelphia's export trade in cement steadily dwindled, until the record for 1907 was two barrels. It is not to be expected that there can be any large development of an export or coastwise shipment of cement from Philadelphia until that port is given as low a rate and as favorable a service as is granted to the railroad terminals on the west side of the Hudson River.

Hardly less important than the type of discriminations just discussed is that which may exist in the rates charged different groups of commodities. The difference between the rates on flour and wheat may be such as to change the location of the milling industry from the West to the East, as would be the case if the rates on flour coming from Minneapolis were made so high in proportion to the rate on wheat, that the Minneapolis millers could not send their flour east, for it could no longer compete with wheat shipped east at disproportionately low rates and then milled in the East. As a rule, it is to the interest of the traffic manager to arrange his rates so as to get all that "the traffic will bear," but this may work a hardship on many shippers.

268. *History of railroad legislation.*—Such being the nature of the railroad business with its resulting enormous power, it is not at all surprising that steps should early have been taken by the government to insure to its citizens the management of the railroads in the interests of all its shippers regardless of size or location. At first the individual states passed laws to insure such treatment to their respective citizens but because of the magnitude of the problem and also because of lack of

uniformity of action, the states were able to do little that was really effective. The agitation did, however, call the attention of the public in a forcible manner to the nature of the problem involved and so paved the way for federal action which was made possible by the clause in the United States Constitution which gives Congress power to regulate interstate commerce. The lesson which had to be learned before control was possible was that private competition among railroads cannot be trusted to correct railroad abuses and that, therefore, public regulation must be substituted. The monopoly nature of railroading had first to be firmly impressed on public opinion. People had to see that, granted competition could regulate railroad abuses, it was at best a blundering and expensive system of setting matters right. It is a great economic waste to have two railroad lines duplicating work which can be handled by one system. From a social point of view, such an expenditure of capital is uneconomical and therefore unjustifiable.

269. *Interstate Commerce Act of 1887.*—As a final outcome Congress passed the Interstate Commerce Act in 1887. It was the result of the best knowledge then available of the subject. Experience soon proved the first act of Congress weak in parts. As a result, several supplemental acts, framed in the light of the experience gleaned by the Interstate Commerce Commission in its ceaseless endeavors to secure justice in railroad affairs, have since been passed. Although the present combination of laws governing railroads is not perfect, they have wrought a marked improvement over conditions existing prior to 1887.

The first federal measure covered in the main five important points. First, unreasonable and extortionate

rates were prohibited. Second, discriminations between persons, places and commodities were prohibited. Railroad officials making such discriminations were liable to fine and imprisonment. Third, all fares and rates were required to be printed and made public and also filed with the Commissioner. Fourth, it is unlawful for any common carrier subject to the provisions of this act to charge or receive any greater compensation in the aggregate for the transportation of passengers or of like kinds of property, under substantially similar circumstances and conditions, for a shorter than for a longer distance over the same line, in the same direction, the shorter being included in the longer distance. The Commission was empowered to suspend this "long and short haul clause," as it is popularly known, whenever it deemed fit. Fifth, all pooling contracts between railroads were prohibited. A commission of experts appointed by the President of the United States is empowered to carry out the provisions of the law. For this purpose the Commission has power to make investigations, to go over the books and papers of a carrier, and to compel testimony. An investigation may be made upon the complaint of a shipper seeking redress for damages or at the will of the Commission itself. If the Commission decides that the law is being violated, it may order the carrier to stop its illegal practices and award damages to those who have suffered because of the said violations. These orders of the Commission are not binding, should the carrier against whom they are made, care to disregard them. The Commission in such cases must appeal to the United States Circuit Court to enforce the order if it sees fit.

270. *Elkins Law of 1903.*—In 1903 the Act of 1887 was amended by the Elkins Law. This appreciably

strengthened the government's control of the railroad. Among other things it makes the corporation, as well as the agent or officer, liable to prosecution for violation of the law and hastens the wheels of justice by causing an appeal from the final decree of the Circuit Court to lie only to the Supreme Court and such appeal must be taken within sixty days from the entry thereof.

271. *Hepburn Act of 1906.*—In 1906 Congress further extended the commissioners' authority by empowering them to fix a maximum rate instead of, as formerly, to declare a certain rate unreasonable and there let it rest. The act further empowered the Interstate Commerce Commission to require uniform accounting of all railroads under its jurisdiction. As a result the business of railroading has in a large measure ceased to be private, and has become open and public. Thus the old problem of private competition versus public regulation has been solved. In its place stands the new problem of public regulation versus public ownership.

272. *Public regulation versus public ownership.*—Thus far the Interstate Commerce Commission has been denied the general power to fix rates. Many feel that under these conditions we must face the alternative of letting the railroads charge pretty much what they please or of adopting government ownership, and argue that if such could be accomplished, the aim of the railroad would be better service instead of profits. They further contend for their side of the case, that personal discriminations would cease, that railway interests would be eliminated from politics and that the unearned increment of railroad values would accrue to society. Many also feel that were the American railroads nationalized, the abnormally high death and accident rate that now

obtains, could be considerably lowered. The desire for profits would no longer prevent the installation of the best safety devices known to modern railroading. The important arguments in favor of private operation are: (1) efficiency in management; (2) greater elasticity in meeting the varying demands of business; (3) the danger in government operation of throwing sectional disputes as to rates into politics. Whatever shall be the ultimate outcome of the problem in America, it is certain that for some time at least we are going to make a more thorough experiment with private operation under government regulation before we pronounce it a failure and adopt the only remaining course—government ownership of the railroads.

Important as is the abolition of discrimination in rates, it cannot be accepted as a complete solution of the railroad problem. According to our analysis railroads are in a high degree monopolistic. As the country becomes more densely populated and the volume of traffic grows, the earnings of old, established railroads should show a marked tendency upward. Unless their charges are regulated by administrative decree, they are likely to become increasingly unjust and unreasonable and to afford larger and larger monopoly profits. But if the Interstate Commerce Commission is to accomplish its task of seeing to it that railroad rates are just and reasonable, not merely among themselves, or relatively, but absolutely, it must have at its command all the data necessary for distinguishing the reasonable from the unreasonable. The meaning usually attached to the phrase, "just and reasonable," in connection with charges is that they shall afford a just and reasonable return on the investment. It would be impossible at this late date to determine what the original investment in railroad property in the United States actually was. The most that can be expected is that the Commission shall be enabled to make a fair estimate of the present value of the investment on which holders of railroad securities are en-

titled to a return and that it shall have some measure of control over the relation between investment and capitalization in the future. The first step that is currently advocated as a means to insuring just and reasonable railroad rates is the valuation of the physical property of the railroads of the country. Although this proposal is bitterly opposed by railroad managers, it can hardly be denied that it follows logically from the policy of rate regulation by Commission to which the Federal Government is now fully committed. Nor is there any good ground for believing that the carrying out of such a proposal would be disadvantageous to investors in railroad securities. Most of the great railroad systems of the country are now conservatively capitalized since the correspondence between tangible assets and capital liabilities, which was so often conspicuously absent at the outset, has since been brought about either by failure and reorganization, or by an appreciation in the value of certain assets, particularly real estate. In addition to directing the Interstate Commerce Commission to make an inventory of the property of the railroads, Congress must also empower that body to control future issues of capital stock and thus to determine in the future the capital invested on which a return may be justly and reasonably claimed by investors. Without such power, the Commission clearly cannot carry out the task which the law has all along imposed upon it, that is, to see to it that only just and reasonable rates are charged.

At the same time that regulation of the railroad industry is advanced this further step, a concession should be made to railroad managers which they would greatly appreciate. In its amended form the Interstate Commerce Act leaves no doubt that Congress recognizes the failure of competition to regulate railroad rates in the public interest and proposes to secure such regulation through the Interstate Commerce Commission. Under these circumstances there is no longer any justification for the sweeping prohibition in the present law of agreements as to rates, pooling arrangements, etc. Not only the logic but the practical exigencies of the situation demand that the Commission be empowered to authorize such agreements among the

railroads as are not opposed to the public interest and that agreements so authorized have the force of legally binding contracts. Such a change would facilitate a more economical and stable organization of the railway business and also lessen the temptation to discrimination. In the opinion of the writer these two important extensions of the regulative policy should be made as promptly as possible, for only in this way can this method of solving the railroad problem be given a fair trial. Then, to repeat the words of Judge Knapp, Chairman of the Interstate Commerce Commisson, "If regulation fails, public ownership will be the next and early resort."—H. R. Seager, "Economics: Briefer Course," pp. 392–4.

CHAPTER II

TARIFF PROBLEM

273. *Basis of international trade.*—We have now to consider the question of the protective tariff. In order to discuss this question intelligently, we must first understand the nature and objects of foreign trade. England produces cheap iron and coal; India, cotton and silk at a low cost of production. England could grow cotton and silk in greenhouses at enormous expense; India could produce iron and coal at great cost and with much difficulty. It is obvious, however, that each country should devote itself to the production of those things which they are best suited by nature to produce, exchanging for them such products of other countries as they require. The permanent basis of international trade is differences in resources and productions of different countries. The most important of these differences is that which exists between the tropical and the temperate zones. The United States, for example, obtains from the tropical zone almost all of her sugar, all of her coffee, tea, a large amount of tropical fruits, rubber, cocoa, spices, tropical woods and a great variety of other commodities. Most of these could be produced in the United States, and some of them are produced here. It is, however, more economical for the United States to devote the major part of her energy to the production of lumber, iron, steel, coal, flour and wheat products, and cotton which she can produce at low cost and in large quantities, and to use these

to purchase the tropical products which she may need.

In addition to the climatical differences in the productions of the different countries, there are other differences existing between countries located in the same latitude. Examples of this difference are furnished by comparison of England and the United States. These countries have much the same climate, and they have in general the same industries. In most of these industries, however, England can produce at lower cost than the United States. The English woolen mills compared with those of the United States are favored with lower wages, greater technical skill and cheaper wool. Consequently the English cost of production of woolens is much lower than the cost to the United States. England can produce goods at Bradford, pay ocean rates to New York, freight to Chicago, and still undersell American competitors. The same is true in glass, cotton, pottery and a variety of other industries. England and the other manufacturing nations of Northern Europe excel the United States, generally speaking, in all those branches of production where skillful manufacturing labor is required and where wages form a large element in the cost of production. The United States, on the other hand, can hold her own in those industries where the price of labor and the large use of machines is important. Those industries in which England excels are, however, flourishing in the United States, and they have been brought into existence by our protective tariff. Without this artificial aid many of these enterprises would not now be carried on in this country. The question is often raised, however: granted that we now have these industries as a result of protection, have we not paid too high a price for them? This is the real point at issue between the Protectionist and the Free Trader.

274. *Protective tariff defined.*—There are two types of tariff, known respectively as a "tariff for revenue only" and a "protective tariff." The sole object of the former is to raise revenue for carrying on the government. Accordingly articles are taxed regardless of the question of aiding home industries. Thus England lays a tax on coffee and tea, though neither can be grown there. The prime object of a protective tariff, on the other hand, is to tax only those articles which come into competition with home products. In the "tariff for revenue only" the rate of tax is fixed solely with reference to the amount of money needed for government expenditures. In the protective tariff a different principle obtains in determining the rate of duty, namely, the relative costs of production in different countries. Thus if it costs a third less to weave woolen cloth in England due to a cheaper labor cost, cheaper wool, etc., the rate of duty imposed by the American tariff would be at least 50 per cent.

275. *Operation of a protective tariff.*—A protective tariff operates by raising the price of the foreign article to such a height that the domestic product can successfully compete with it. If the rate is so high as practically to exclude all foreign importation, no revenue goes to the government, but the domestic consumer pays a tax to the domestic manufacturer equal to the difference between the cost of the foreign product laid down in America and the selling price of the American product. In other words, the American producer gets all of the tax. If the tariff wall is not so high as to exclude all foreign competition, then the government receives the duty. Under the condition that we are the chief market of a foreign producer he must bear the tax in order to enter the American market. If not, the tax is borne by the

American importer, i. e., ultimately by the American consumer.

276. *Theory of protection.*—Protectionists admit that for the time being while the industry is being established the tariff operates as a tax on the consumer of the protected article. They hold, however, that this is merely a payment for benefits which will flow from the general prosperity of a nation which diversifies its industries and develops its resources.

But it may be urged, why need a country employ artificial means to diversify its industries? If the natural basis for those industries exist they will develop themselves. This, however, is a false assumption. If an industry gets an early start in a given country or district, that country or locality is likely to retain its advantages because of the concentration there of capital and labor with the requirements and possibilities of the industry. Many industries are located at certain places solely because of "the momentum acquired by an early start." In the early stages of an industry, the tariff acts as a stimulus, protecting the domestic producer from foreign competition. Protection may be accepted on sound economic grounds in all countries in a young and dynamic condition which desire to develop their resources and diversify their industries. We can, therefore, justify the attitude of the country that taxes itself at an early date for the sake of testing and developing the latent aptitudes of its land and its people. At the outset it will thereby sustain a loss, because in the beginning it can gain more goods by the indirect method of exchange than it can by production; but there may easily come a time when it can gain more by the direct method. If we learn to make things more economically than we could originally

make them, if we hit upon cheap sources of motive power and of raw material, and especially if we devise machinery that works rapidly and accurately and greatly multiplies the product of a man's working day, we shall reach a condition in which, instead of a loss incidental to the early years of manufacturing, we shall have an increasing gain that will continue to the end of time. It may be further stated that without protection and the burdensome tax which it did undoubtedly impose upon us, we should have had to wait far too long for this gain to accrue and should have sacrificed the benefits that come from a long interval of diversified and fruitful industry.

Professor Seager thus summarizes the argument for free trade:

> The same reasons that make free exchange within a country advantageous may be urged in favor of free trade among countries. Political boundaries do not alter the essential facts that trade is at bottom an exchange of goods for goods in which both parties are gainers, and that the freer the conditions of exchange the more highly will the division of labor be developed. Differences in the productive capacities of different countries fit some to produce some things, others, others. If free trade be permitted, each will tend to produce only those things for which it is best adapted and to rely upon other countries for the other things desired and in the production of which the latter have a relative advantage. The consequence will be a larger joint produce and a larger share of wealth for each country than it could secure if compelled to produce for itself all of the things that its inhabitants require. If restrictions on trade are to be approved, it must be because they accomplish results that compensate a country for the undoubted losses which they entail.—H. R. Seager, "Economics: Briefer Course," p. 291.

Professor Bullock illustrates the argument as follows:

The immediate effect of establishing, by a protective duty, an industry that would not have been profitable otherwise, is to attract into a less productive industry capital that would have been invested in more productive channels. What is it that makes it possible for some American producers of wheat, corn, cattle, iron and steel products, cotton and cotton goods, leather, boots and shoes, tobacco, and oils to sell their products in foreign countries at prices that enable them to compete with any producers in the world, while other American producers cannot do so? Simply the fact that the first class of producers enjoys exceptional facilities. A protective duty upon articles that we cannot as yet produce as cheaply as certain foreign producers, simply invites capital away from industries where we have unparalleled advantages into industries where our facilities are not so good. Its immediate effect, therefore, must be to decrease the productivity of the capital invested in the protected industry, and to cause economic loss.

But it may happen that the industry established by the protective duty will prove to be one for which our producers have first-rate facilities. Inexperience or other initial difficulties may have been the only causes that prevented capitalists from making a profit by producing the product at the price of one dollar. It may happen that, in a few years, the domestic producers can overcome these difficulties, and make a profit by selling the commodity at as low a price as the foreign producers. When this occurs, the industry would prove self-sustaining if the duty were removed; and it would become a more profitable instead of a less profitable industry. Then the economic loss would cease, and the ultimate result of the protective duty would have been to *hasten* the establishment of the industry. The word *hasten* is italicized because such an industry would be one for which the country had good advantages—one which would have been quite sure to be established without protection, as the labor and capital force of the country increased. Protective duties may

hasten the growth of such enterprises; but the economist must insist that they cause a less productive use of capital, hence an economic waste, until the industry becomes self-supporting. Then the duty should be removed, and the economic waste would cease.

It is possible that experience under a protective duty may show that the protected industry does not enjoy such great advantages that producers can afford to sell at the prices charged by foreigners (in this assumed case, one dollar). This is merely a demonstration that the industry does not enjoy such superiority over foreign producers as other industries of the country possess. A protected industry that does not become self-supporting causes a permanent economic waste. The labor and capital invested in it could have been employed more profitably in some other industry.

277. *The evils of "dumping."*—One of the strongest arguments in favor of protection is that it prevents "dumping." By dumping is meant the sale of products abroad at prices lower than those charged at home. Dumping arises in a number of ways. Export bounties may be granted by the home country for the specific purpose of encouraging foreign trade; or a monopoly may find it profitable to dispose of a surplus abroad at prices which would be needlessly low in the highly protected home market; and indeed, there is good reason to believe that many manufacturers for the export trade make it a practice to sell abroad at unusually low prices whenever they believe that their foreign market is threatened. Dumping is never permanent. So far as it may be said to have a rational object it aims to suppress competing industries by selling temporarily below cost; and when those industries are forced out of business, prices will be raised. An interesting illustration of this policy is afforded as early as 1813, when the English manufacturers in order to crush out American

industries and to regain their lost market sent to America shiploads of goods on most liberal terms in order to crush out the developing industries of America; for in the words of a prominent English statesman of the time, "It is well worth while to incur a loss upon the first exportation, in order by the glut to stifle in the cradle those rising manufacturers in the United States."

The problem confronting the dumping of foreign nations is by no means a dead issue, nor an unimportant one. It is such as to merit serious consideration at the present time, as is seen in iron and steel industries of England, Germany and the United States.

278. *"Dumping" a present problem.*—Of permanent competition from England and Germany in the heavy iron and steel trade, the United States Steel Corporation has no reason to be afraid. This appears from the comparative prices of pig iron and steel rails. The prices charged by steel producers in free trade England are about equal to those charged in protectionist America. The tariff does not seem to make much difference. The matter is not open to argument. The official figures of prices for the last decade are subject to only one interpretation. Over a period of ten years, the prices of iron and steel would not have been any lower in the United States if Americans had paid the cost to English consumers plus the cost of transportation.

But would American steel buyers have paid English prices? Here we come upon the heart of the whole controversy. Without the intervening wall of tariff duties, and whenever depression reduced the domestic demand for English and German steel, this country would have been made the dumping ground for the

surplus products of their mills at prices as close to the prime cost of production as would have been necessary to make rapid sales. Price-cutting is essential to the success of occasional invasions of foreign markets. When the German or American producer attempts to sell rails in the English market, he encounters the strong though passive resistance of established trade conditions. He is regarded as an interloper. He can do little business save by offering great inducements in lower prices than those which the domestic producer is seeking to maintain.

279. *Why "dumping" is possible.*—The invader is influenced to reduce prices by another consideration. Every ton of steel unmarketable at home which can be sold at any figure above the cost of the labor and materials which goes into its making, adds to the profits of the producer, because it reduces his cost on the entire output of his mill.

A German producer of rails may have a prime cost, that is, a cost for labor and materials, of $16 per ton. To this amount must be added expenses of maintenance, salaries, depreciation of plant and interest, amounting to $3,000,000 or $3 per ton. His total cost is, therefore, $19 a ton, and if he sells his entire output at $22.50 he is making large profits. But suppose that Germany suffers, as she is now suffering, from an industrial depression which reduces the domestic demand for the products of this mill, whose prices, if it is in a syndicate, we may assume to remain unchanged to the German consumer, to 500,000 tons. The fixed charges and fixed expenses of the mill remain unchanged at $3,000,000 per year, only now, since they must be borne by half the number of tons as before, they are $6 instead of $3 a ton. This, added to the prime cost of $16 a ton, makes

a total cost of $22 a ton, leaving only 50 cents a ton profit and probably resulting in a suspension of dividends.

The German steel maker looks about for relief from this situation. He finds a customer in England who will take 300,000 tons for a colonial railway if he can get them at $18, only $2 above the prime cost of their production, leaving no profit and paying only $2 towards fixed expenses and interest. In spite of the low price the German steel producer instantly accepts the offer, since it adds $600,000 to his profits for the year, bringing them up to $850,000.

280. *Production on a large scale economical.*—To understand how this comes about it will be necessary to produce two statements: The first showing the expenses and receipts of our steel mill, when producing 500,000 tons, just half its total capacity, and selling this reduced output at $22.50 per ton in the domestic market; and the second, showing the same items changed by the addition of 300,000 tons of export business sold at $18 per ton.

I.

EXPENDITURES.		INCOME.	
Materials and labor	$ 8,000,000	500,000 tons @ $22.50	$11,250,000
Interest, salaries, maintenance, etc.	3,000,000		
Net profit	250,000		
	$11,250,000		$11,250,000

II.

Materials and labor	$12,800,000	500,000 tons @ $22.50 300,000 tons @ 18.00	$16,650,000
Interest, salaries, maintenance	3,000,000		
Net profit	850,000		
	$16,650,000		$16,650,000

The significant figure in the calculation is the $3,000,000 of fixed charges and expenses which must be paid whether the sales are large or small. Because of this fact, anything above $16 a ton is so much clear gain, and, if necessary to get the business, a price of $16.25 will be named. By accepting this low priced order of 300,000 tons, instead of a beggarly $250,000, a year, entirely too narrow a margin for safety, the German producer raises his profits to almost $850,000, a respectable and comfortable sum. For the same reason, if a price of $18 would not bring out English business, the German could very well afford to go down to $16.25, only 25 cents direct profit, but adding $75,000 to his year's earnings. Lower than $16 he would not go. Each ton of steel must pay the cost of its own production. Down to $16, however, the German exporter will very cheerfully descend.

281. *The United States Steel Corporation and "dumping."*—The United States Steel Corporation occasionally follows the same course, pushing its wares into foreign markets by offering prices which would spell ruin if applied to its domestic business, but which show large additional profit when the object is merely to cut the fixed expenses and charges which must be borne by each ton of the corporation's output. The consequences of this policy to English producers are most unfortunate. Although the volume of these cut price imports may not be large, compared with the total sales of English mills, they nevertheless tend to demoralize the trade, they make consumers dissatisfied, and under some circumstances they may break down prices to a point where all but the strongest domestic producers are losing money. This "dumping" of low priced goods by German and American producers whenever industrial

depression reduces their domestic demand, furnishes to the English protectionist his soundest argument. While it has not yet prevailed to change the time-honored policy of free trade under which England has prospered and which the ruling classes regard as the cause of her prosperity, the existence of the "dumping" evil is recognized, and students of British policy believe that measures of protection, if not of retaliation, must eventually be adopted by the government.

282. *A tariff wall prevents dumping.*—We have now reached the answer to the question with which we started. Free trade in iron and steel for the United States means that this country shall open its doors to the free entry of the surplus products of British and German mills whenever industrial depression makes American sales profitable. With the tariff removed, British and German steel can be sold at a small profit as far west as Chicago and St. Louis. Throughout the eastern states, where most of the iron and steel production is utilized, the present scale of prices would offer the foreigner, even after the sea and rail rates were paid, a considerable margin of profit. That he would take advantage of this opportunity to enter the greatest steel market in the world and thus keep his mills in full operation whenever the domestic demand failed him must be admitted.

The effect of these sales upon the United States Steel Corporation and upon the American iron and steel industry, will depend somewhat upon circumstances. It must not be supposed that these imports will be continuous. American producers would have the great advantage remaining that their methods, rolls, sizes and grades are adapted to local needs. Their business alliances, also, especially in the case of the United States

Steel Corporation, would greatly assist them in holding the market. Throughout a large section of populous territory in the West, moreover, they need not fear European competition. The erection of large works at Gary, Indiana, and Duluth, Minnesota, by the Trust, is a recognition of the growing importance of the West as a consumer of steel. Finally, it is reasonable to suppose that the railroads would aid the American steel companies, which furnish them a large amount of freight, by adjusting rates to the disadvantage of the importer. Altogether, this combination of natural advantages would seriously handicap the foreigner in his attempt to enter the American market. They would invade us in force only when compelled by the decline of their domestic business.

283. *Foreign importations not always an evil.*— Furthermore, unless industrial depression in either England or Germany coincided in point of time with depression in the United States, free iron and steel would prove to the American consumer an undisguised blessing, and would in no way injure the producer. For example, the demand for steel for three years prior to the autumn of 1907, can be described by no milder word than ravenous. All the mills were far behind with their orders; even high premiums could not hasten deliveries. At the same time the railroads were congested with freight. If cars moved forward fifteen miles a day over the trunk lines the consignee might count himself fortunate. At such a time it would have been most beneficial to the consumer of steel along the Atlantic seaboard if the tariff had been removed, and foreign iron and steel allowed to enter. As it was, even in the face of duties of $4 a ton on pig iron, $7.84 on rails, and so on to higher figures, $30,000,000 of iron and steel

products, so great was the demand, were imported during the year ending June 30, 1906. Prices would not have been affected under these conditions by the largest imports which England and Germany have ever been in a position to send us. One very obvious solution of the tariff problem has been suggested, that a permanent tariff commission should be appointed with power to remove or restore duties according to the conditions of the domestic market. Such a commission need have had no hesitation in removing the iron and steel duties during 1906. On the other hand, in 1908, when England and Germany were suffering along with the United States from a world-wide industrial breakdown, the absence of tariff protection would have meant that prices would have been slaughtered by heavy importations and the Steel Trust forced into bankruptcy by its abnormal fixed charges, $56,700,000 a year, which a 25 per cent decline in prices would have left the company insufficient revenues to meet.

Whether such a result would make for the general welfare, it is difficult to decide. It is, moreover, probable that before another depression may be expected, the Steel Trust will have grown so strong as to view with indifference the efforts of foreigners to invade its territory. Whatever our opinions as to the future, however, it is a satisfaction to reach the conclusion that whatever the tariff may have done toward creating and supporting monopolies in other lines of production, its only relation to the Steel Corporation has been to protect it, in common with other American producers of iron and steel, from the surplus production of Germany and England.

Whatever may be the respective arguments of free trade and protection, it is not expected by wisely informed students of this question that the United States

will abandon the protective system. The fact remains that an enormous amount of capital is invested in productive industries, and that a large number of employés are dependent upon these for their living, and that the abolition of the tariff would mean ruin for many of these. But while protection may well be considered the settled policy of the American people and the voice of free trade silenced as far as practical affairs go, it by no means follows that the tariff question is no longer a live issue. While we as a nation believe in protection, the kind and amount of protection is ever a matter open to discussion. It is contended that the recent protective tariffs have aided the growth of monopolies, that the admitted testimony of one of the trust magnates is to the effect that the "tariff is the mother of the trusts." How the tariff shall be used only to protect American industry and not to enable overgrown monopolies further to enrich their coffers, is a prominent part of the present tariff agitation.

284. *The need for reciprocity.*—Another part of the tariff problem refers to the subject of reciprocity. The high tariffs passed at the time of the Civil War, and since maintained with occasional modifications, have afforded our industries a virtual monopoly of the American home market. For some time after the close of the war the American producer found that this market was all that he could handle. We have now reached a place in the development of our manufacturing where the American producer has outgrown the American market. He feels that he is entitled to a slice of the world's market. The means to this end is reciprocity. This growth of American manufacturing has resulted in a strong demand for a more liberal tariff policy. Going hand in hand with this agitation there has been an increasing de-

mand for a lowering or entire removal of the tariff duties on the raw materials of manufacturing. This is desired so that the American manufacturer will not be handicapped in neutral foreign markets by being compelled to pay more for his raw material than his English or German rivals. There is no excuse or justification whatever for the tariff on lumber, copper, bituminous coal, raw wool and hides. The manufacturing interests in the United States need cheap raw materials, no matter from where these materials are derived.

285. *What kind of a tariff system shall we adopt?*—A final phase of the tariff problem involves the question of the kind of tariff system that we shall adopt. There are in vogue at present three general types, known as the general autonomous tariff, the maximum and minimum tariff and conventional tariff. The United States has the first kind, France the second, and Germany the third.

There is a growing feeling in the United States that a straight general tariff such as the United States has, is too inelastic and is therefore not suited for a nation seeking to gain trade concessions from other nations. In many ways the German system of making individual trade treaties with other nations is the most satisfactory system of conserving at the same time the interests of protection and of reciprocity. However, this system could not be readily introduced into the American system of government since its treaty-making power rests in two separate branches of the government. A commercial treaty requires centralized authority and a certain degree of diplomacy in its execution. Considering all phases of the question, the maximum and minimum system seems best suited to American conditions. After this general problem referring to the kind

of tariff, is settled, there still remains the question as to what shall constitute the difference between the maximum and minimum duty and many details of administration. Finally a tariff perfectly adjusted to American conditions to-day may be wholly out of harmony with conditions a decade hence. The tariff problem can never be definitely settled for all time, but this is merely the price which all nations must pay which would remain in a progressive and dynamic condition.

CHAPTER III

TRUST PROBLEM

286. *The beginning of the trust movement.*—In the following account of the history of the trust movement the writer has borrowed liberally from those sections of "Trust Finance" which treat of that subject.[1]

The Standard Oil Company, the first trust, was organized in 1882. The second large combination was the American Sugar Refining Company, which was formed in 1887. With the organization of these combinations the trust movement may be said to have begun. It did not, however, assume immediate importance. It is true that the period immediately following the organization of the Sugar Trust was marked by a general outcry against monopoly, and that popular sentiment took form in numerous anti-trust laws enacted by state legislatures and in the drastic Sherman Law of 1890; but neither the number of companies formed, nor their aggregate capitalization and resources, gave any reason to suppose that the movement toward the uniting of manufacturing plants into large combinations would assume a more than limited importance. Up to 1893, when the panic put a sudden stop to all kinds of company promotion, the securities of only twenty industrials of any importance had been listed on the New York Stock Exchange. Besides those already mentioned, the principal combinations were the National Lead and the Distilling and Cattle-Feeding Trusts, both organized

[1] E. S. Meade, "Trust Finance."—Appleton & Co.

in 1887; the American Tobacco Company in 1890, and the General Electric Company in 1892. With the exception of the sugar, oil and rubber trades, there was not even an approach to monopoly; only a few of the leading industries had been consolidated; and the total capital stock of all the manufacturing combinations organized from 1860 to 1893, inclusive, was less than $1,000,000,000.

287. *The rapid growth in 1898.*—The real trust movement dates from 1898. Four years from that date found the leading industries of the United States reorganized along lines of consolidation. In three years, 1898–1900, one hundred and forty-nine large combinations, with a total capitalization of $3,578,650,000, were formed. Hardly an industry escaped consolidation. Coal-mining, iron and steel, copper, lead, zinc and silver; paper, leather, rubber, salt, starch, chemicals, cordage, ice, glass, paving, and roofing, practically all of the great industries whose produce is used in further production, have been in large part consolidated.

The field of consumption goods, i. e., those products which are sold over the retail counter, has been scarcely less affected by the combination movement. In this field we have the oil and sugar companies already mentioned, the Standard Oil Company having been formed anew in 1899. We have beer, whiskey, and tobacco produced by trust organizations. The United Fruit Company, the National Biscuit Company, the Diamond Match Company, the American Woolen Company, the International Thread Company, the American Writing Paper Company, the United States Flour-Milling Company, the International Silver Company, have been organized to produce the necessities or the luxuries of the consumer.

The trust movement began with the close of the industrial depression which followed the panic of 1893, and which, as a matter of origin, can probably be traced to the panic caused by the failure of Baring Brothers in 1890. During this period, the steady fall of prices, and the slow-moving liquidation of credit had severely handled the manufacturers and merchants of the United States. The aggregate liabilities of failure in manufacturing and trading from 1894 to 1898 exceeded $725,000,000. Many of those who did not fail outright labored under heavy burdens of debt. Few men earned large profits; almost every one had his scale of earnings greatly reduced. Manufacturers saw their plants deteriorate for lack of the money to keep them in repair. Bank clearings decreased, from 1892 to 1893, $8,700,000,000.

The securities market was especially depressed. An index number made up from the prices of ten leading railroad stocks shows a decline from 1892 to 1896, of 31 per cent. Sale of stocks on the New York Stock Exchange from 1894 to 1896, compared with the period 1891 to 1894, decreased $100,000,000. Although the general depression throughout the country produced a large surplus of idle funds which flowed into the New York banks, the low interest rates resulting were powerless to excite public interest in speculation. The people were busy paying their debts. They had just experienced the penalties of optimism, and they were in no humor for risk-taking. The *Financial Review* of 1895 sums up the financial situation as follows: "The result of these hard times has been to make our own investors unusually cautious and to produce extreme wariness of American securities on the part of foreign capital. Under such conditions it could not be expected that the

listing of stocks and bonds representing *new* enterprises would be heavy."

288. *The relation of prosperity to the trust movement.*—With the summer of 1897, recovery began. A large wheat-crop, sold at good prices, increased the earnings of the grain-carrying railroads and stimulated investment in their securities. From 1896 to 1897, the earnings of the five "Granger" roads running into Chicago increased $13,000,000. The effect of increased earnings was soon felt in the stock market. During 1897, the prices of these Granger stocks increased as follows, the first quotation being the lowest price in January and the second highest price recognized during the year:

Atchison, Topeka & Santa Fé (preferred)	22⅞ to 35½
Chicago, Burlington & Quincy	69⅜ to 102¼
Chicago, Milwaukee & St. Paul	72¾ to 102
Chicago & Northwestern	102¼ to 132½
Chicago, Rock Island & Pacific	67⅞ to 97¼

Other railroad stocks advanced in sympathy with the Grangers, the increase being as much as twenty points in the case of several roads, and reaching 29½ in Northern Pacific preferred. Under the stimulus of higher prices, the sale of stocks on the New York Stock Exchange increased in one year 22,000,000 shares. The buyer, however, was as yet almost wholly confined to old securities. Large amounts of low-priced reorganization securities were coming into the market, and the tempting bargains which these offered occupied the attention of investors; while the rapid rise in all railroad stocks furnished abundant opportunities for speculation.

The industrial revival gathered strength in 1898; another large harvest and continued high prices in-

creased Granger earnings $16,650,000 over the high figures of 1897, and these stocks continued to lift the entire market. Other industries also increased their output. From 1898 to 1899, for example, the production of pig iron increased 2,121,000 tons. Foreign trade was also favorable. During 1898, exports of merchandise exceeded imports by $594,000,000, and an importation of $104,000,000 of gold strengthened the basis of American credit. General business was stimulated by these favorable conditions. From 1896 to 1898, New York clearings increased $13,000,000,000. The rapid improvement of business united with the successful result of the Spanish War to inspire in all classes the most sanguine optimism. The people believed that good times and high prices had come to stay, and the national feeling found instant expression in the quotations of securities.

The first buying of stocks came from the investors who were attracted by the large earnings of railroads to transfer their capital to more promising investments. A speculative demand for these securities set in at the same time, and large amounts were bought to sell at an advance. The profits which were rapidly realized attracted wide notice and the demand for stocks became general. The stock market was the place where money was to be made. People of every class and condition caught the fever of speculation and were ready to buy. It was impossible to supply this demand for stocks from existing issues. Most of these were held for investment, and only small quantities came into the market. The time was ripe for the promotion of new enterprises. New companies were organized and their securities were readily sold.

289. *The promoter and the trust movement.*—This

condition called the "promoter" to the front. It is the promoter who organizes new companies and places their prospects before the speculative and investing public. His organizing energy usually, although not of necessity, follows the line of largest immediate advantage to the community. If there is an opportunity for new industries or new combinations of industries, the promoter organizes companies to take advantage of the opportunity. Noting the most promising outlets for industrial activity, he capitalizes the new opportunities and markets the securities while the public is in the humor of buying shares. If we go back to the early years of our industrial history, we find the promoter organizing banking and land companies. At a later period, railroad schemes were put on the market. Public service corporations, mines, and street railways have each had their share of attention. Whenever an opportunity is presented for the exploitation of new resources or new conditions, the promoter is on hand with his prospectuses and his propositions "to be submitted to the approval of the investing public."

Railroads had furnished the bulk of the new securities since the Civil War, but in 1898 large amounts of low-priced railroad stocks were no longer available. The country has been well equipped with transportation facilities and few projects for new mileage were put forward. From 1886 to 1889, 28,177 miles of railroad were constructed, from 1896 to 1899 only 7,427 miles. From 1886 to 1889, $1,167,000,000 of railroad securities were issued. From 1896 to 1899, however, there was an increase of only $371,842,000 of railway stocks and bonds; many of these, moreover, being investment securities and selling at high prices. The former outlet

for investment had been closed, and a new one was to be opened.

This outlet was furnished by the organization of the industrials. Says the *Financial Review* of 1900 in its report for 1899:

> The extreme industrial activity engendered a feeling of great confidence, very propitious to the creation and multiplication of new industrial enterprises. Easy money in the early months, caused by a congestion of currency at this center, materially aided the movement. The result was the formation and flotation of industrial undertakings of enormous magnitude and in unparalleled numbers. In every industry, in every line and branch of trade, great consolidations and amalgamations were planned, and in most cases carried into effect. It was the great opportunity of the promoter, and he was not slow to avail himself of it. Seeing in any given trade a large number of separate businesses or manufactories his effort was to merge them together in one large corporation, incurring partial or complete control, and giving at least the appearance of monopoly.

When one considers the severe nature of the competition to which manufacturers on all hands had been subject prior to 1898, it is not difficult to understand why the régime of free competition was productive of manifold hardships to the manufacturer. Competition might be considered the life of the trade, but at the close of the last industrial depression it was regarded as the death of profits. It was highly desirable from the manufacturer's view-point to stop, or at least abate, this struggle, which benefited nobody save the consumer, and which, even in his case, in the field of production goods, had to be straightway passed on his own customers. The producers were tired of working for the public. They desired a larger profit without such an

effort to get it, and they wished to have the profit available for distribution and not locked up in plant and equipment. In 1898 and 1899 the time was ripe for a change. Men were weary of competition, and the era of combination was gladly welcomed.

290. *Evolution of the trust.*—Many attempts had been made before 1898 to lessen the recognized evils of competition. These attempts had usually taken the form of pools, many of which, especially in the iron and steel trades, were organized during the last industrial depression. A pool is a voluntary association of sellers who place the marketing of their product under some central control or general restriction. The primary object of such agreements is to secure profitable prices, either directly or by means of payments from a central treasury, to the members of the association. The methods by which these profitable prices have been secured are in general as follows: (1) The output of the mills included in the association is restricted, so that the prices can be advanced by the limitation of supply; and (2) the buyer is held to the regular quotations, and is unable, by playing off one competitor against another, to obtain special concessions. The pool may go further than the regulation of prices and output; it may secure favorable terms on material purchased; it may deal as an association with railroads to obtain such concessions as are granted to large shippers, and it may assist its members in dealing with organized labor. As a general proposition, however, the purpose of a pool is to regulate production and control prices, leaving other details of management to the separate companies.

291. *The weakness of the pool.*—The essential weakness of this form of organization is its inability to en-

force its agreements. The necessity of voluntary assent on the part of every member of the association, the liberty of each to withdraw on short notice, and the difficulty of establishing relations of mutual confidence among competitors, all unite to emphasize this defect. The members of a pool have long since formed the habit of closely scrutinizing the moves of those in the same business, and even a small misunderstanding often creates a feeling of mutual distrust and apprehension which works the destruction of harmony and the final dissolution of the organization.

The successful management of a pool is peculiarly difficult during a period of business depression, when business at remunerative prices is hard to get. Strong producers at such a time are suspected of attempts to obtain more than their allotted share of orders by methods which are contrary to the spirit, if not the letter, of the pool agreement. For example, the Bessemer Steel Pool originally applied only to the tonnage of steel billets, ingots, bars or slabs. The steel which was rolled into merchantable shapes did not count in the allotment. Some of the large producers took advantage of this fact to market as much as possible of their output in the form of finished material, by this method of indirection far exceeding the limits of their allotment, and they could not be penalized for so doing. Such offenses against the pool agreements made their permanent continuance impossible.

292. *The original organization of the trust.*—The "Trust" movement of the eighties promised a more satisfactory restriction of competition. In this form of organization, agreement among manufacturers as to prices and outputs was secured by depositing the stocks of the constituent companies with trustees in exchange

for trust certificates. These entitled the holder to such dividends as might be declared on the stocks, and also empowered them to vote for the trustees in the same manner as the stockholders of a corporation elect their directors. The trust certificate, moreover, could be dealt in on the stock exchange in the same way the certificates issued by the voting trust of a corporation. The trustees, being in control of the stock of the several corporations included in the trust, directed the management of these companies, and secured a uniform policy upon prices and output. Permanence of control was secured by making the transfer of stock to the trustees, except by formal dissolution of the trust, as provided for in the articles of the association, irrevocable.

The trust, so far as it included former competitors, furnished a more satisfactory restriction of competition than the pool. It was open to fewer objections; its organization was permanent; its government was centralized, responsible and representative. The control of the constituent corporations by the central organization—the trustees—was complete, for the trustees elected the board of directors of each of the constituent companies. Because it was permanent and centralized, the trust pursued a more enlightened policy as to prices than the pool. The Standard Oil Trust made a considerable reduction in the price of refined petroleum, and the sugar trust, although for some years in practical control of the market, did no more than to restore prices to a living basis. The Whiskey Trust attempted to charge excessive prices, but the complete failure of its attempt, owing to growth of competition, justified the wisdom of more conservatively managed organizations. The Cotton Oil, Linseed Oil, and Lead Trusts showed no disposition to prac-

tice extortion upon the consumers of these products. The trust, as a device for the control of competition, was satisfactory. Its legal position, however, was inherently defective.

293. *The trust declared illegal.*—The trust agreements were matters of record. Their organizations were made under the usual legal forms, and the details of these organizations could not be concealed. The trustees could not refuse to disclose their authority for issuing the trust certificates which were dealt in on the exchanges. Any stockholder could enforce his right to examine the constitution and working of the trust which held his property. Neither could the fact be concealed that these corporations, whose identity and active life had been preserved, were, under the trust agreement, no longer masters of their own actions. They had surrendered their delegated power to the trustees. A perfect "combination in restraint of trade" had been effected, and in view of the manifold statutes prohibiting these self-evident combinations, the dissolutions of such combinations waited only for an attack upon their right to exist.

This came in 1890, when the Attorney-General of New York successfully brought suit against the North River Sugar Refining Company under the common law. The Standard Oil Trust was also declared illegal on similar grounds by the Supreme Court of Ohio in 1892.

The result of these suits showed that even without the new menace of the Federal anti-trust law the legal position of the trust had become impossible. The States had prohibited all combinations in restraint of trade. The corporation is the creation of the State, and the State can revoke the powers which it has granted when

these powers are exceeded or unlawfully exercised. Certain corporations had combined into trusts in order to limit competition—i. e., to restrain trade. These corporations had exceeded their powers, they had violated the laws of the states which had created them, and their charters were therefore forfeited. Unless some new device could be discovered by which the hardships of competition could be alleviated, the pool, whose existence, though illegal, could be partially concealed, and which was ordinarily safe from legal attack, whenever regulation was required, must still be employed. Its defects were generally admitted, and it has very often aggravated the very evils which it was designed to cure; but if the trusts are to be forbidden, the pool seemed to be the only form of combination possible.

294. *The holding company.*—Before 1889, when the corporation law of New Jersey was revised, the laws of no state authorized the chartering of a corporation for the general purpose of owning the stocks or property of other corporations. Consolidation of corporations was more generally permitted, but the purchase of stocks of other corporations by a holding company was not considered to fall within the field of corporate privileges. There were but few exceptions to the general rule that a corporation should be organized for a specific purpose or for closely allied purposes. Pennsylvania had gone so far as to prohibit incorporation for more than one purpose.

Now it was plain that the trusts could be preserved if a new corporation could be formed which was empowered to purchase, either for cash or with its own stock, the stocks of the several companies which were included in the trust, and which it was desirable to keep united under some form of permanent control. The

only changes which would be made by such an arrangement in the organization of the combination would be these: (1) To substitute for the certificates of the old trust the shares of the new corporation; (2) to change the relation of trustee and trust into the relation of owner and property; and (3) to substitute for a board of trustees a board of directors. The result would be a single corporation whose assets were the securities of other corporations, each one in full possession of its corporate faculties and exercising all of its lawful corporate activities; but the affairs of all would be placed under the permanent direction of the company owning a controlling interest in the stock of each, and competition among these companies would thus be prevented. The holding company, if this course seemed preferable, after acquiring the stocks of a corporation, would dissolve it, remaining in possession of the property which the canceled stock represented, and the securities-holding company would also purchase the property of partnerships or individuals without resort to the expedient of organizing them into corporations in order to place their ownership in trust, as was formerly necessary.

295. *The success of the holding company.*—It is true that this proposition of the holding company, first broached about 1890, did not differ in principle from the illegal trust which it was intended to supersede. The same combination in restraint of trade existed as before. If anything, the new combination, which was one of ownership and not of trusteeship, was more perfect than the form which had just been declared illegal. The suggested plan was a violation of both the spirit and the letter of the anti-trust laws which had just been successfully invoked against the sugar trust. A

company whose sole reason for existence was to control the ownership of previously competing corporations had manifestly effected a combination in restraint of trade. All this was admitted. Moreover, no state in which the sentiment against monopoly was strong enough to pass and enforce the anti-trust law, could be expected so to amend the statutes of incorporation, as to permit the organization of corporations to evade the law. However attractive the proposition might be, there seemed to be no way to bring about the authorization by one set of laws of a kind of corporation whose reason for existence and whose purpose of organization another set of laws explicitly forbade.

The difficulty seemed to be insurmountable. For the sake of profits, competition must be restricted. The law said that its restriction was illegal. No state legislature would have run the risk of legalizing the formation of corporations to perform *within that state* acts which would have necessitated the repeal of an anti-trust law in order to make them lawful, and which would have been further in violation of the common law. But in those three italicized words lay the salvation of the trusts. Although no state would empower a corporation to defeat the intention of its own statutes, a state was found to pass an act of incorporation which rendered void and of no effect the anti-trust laws of every state attempting by statute to preserve competition. That state was New Jersey.

296. *The corporation law of New Jersey.*—Under the provisions of its act, a body of men may form a corporation under the laws of New Jersey, which, among other manifold privileges, may purchase and own the stocks, or other property, of any corporation engaged in any kind of business in any state, providing the forma-

tion of this corporation does not violate the law of New Jersey, on complying with the following easy requirements: (1) To pay a small fee and an annual tax; (2) to maintain a principal office in the State of New Jersey at the entrance to which the name of their company is conspicuously displayed, and where a legal representative of the company can be found upon whom process may be served; (3) to keep the stock transfer books of the company open to inspection of any stockholder at its New Jersey office; (4) to make an annual report to the Secretary of State; (5) to hold their annual stockholders' meeting at the New Jersey office of the company; and (6) to have as one of their directors a resident of New Jersey.

For momentous consequences, this statute of New Jersey is hardly to be equaled in the annals of legislation. Sixteen sovereign states had passed searching and stringent laws in prohibition of any attempt to restrict competition, laws whose detailed minuteness of specification could hardly be improved upon, laws which had been effective against the only permanent form of competition regulation yet attempted, and which undoubtedly represented the conviction of a majority of the people of the United States—a conviction finding more general and authoritative expression in the Sherman Anti-trust Law, and strengthened by the anti-monopoly provision of the common law; a well-nigh unanimous sentiment opposed to any form of trust or pool; and the little State of New Jersey, containing 2 per cent of the population and one and three-tenths of the wealth of the United States, by the simple act of amending its corporation laws, nullified the anti-trust laws of every state which had passed them.

297. *Legality of the holding company.*—The legal

position of the holding company was finally established by the United States Supreme Court in the case brought before it to test the applicability of the Sherman Act to the American Sugar Refining Company, which had just purchased four competing refineries in Philadelphia. The court held that the Sherman Act applied only to interstate commerce, and that "the fact that an article is manufactured for export to another state does not of itself make it an article of interstate commerce." The court declared that, were the terms of the act more liberally construed, the effect would be to give the Federal Government control of nearly all the business of the states, a right which it was never intended that it should possess. Moreover, when, as usually happens with the industrial trusts, the New Jersey corporation owns no property other than the stocks of other corporations, the states in which these constituent companies are located can attack neither the domestic corporation which still preserves its separate existence, nor the New Jersey corporation which is acting within the laws of the state which created it. The company organized to own the stocks or property of other companies proved, therefore, to be the solution of the problem presented by the hostile attitude of the state legislatures toward the trust. Under the joint protection of the state of its origin and the Constitution of the United States, and secured from interference by the federal courts, the trust, as this form of corporate organization, borrowing its name from the institution which preceded it, is now universally known, could achieve all the purposes of its organization without let or hindrance.

By reconstructing the "trusts" to conform to the law, by capitalizing these permanent pools, the builders of the trust made possible a widespread reorganization of

competitive industry along more profitable lines, and opened the way to the creation of the huge mass of industrial securities which represent the capitalization of manufacturing industry in the United States, from participation in whose profits the public had before been excluded. With this device of corporate organization, escape from competition was, at least prospectively, secured.

298. *The economies of combination.*—Before 1898, the advantages of restricting competition had come to be recognized. A sufficient number of combinations had been formed to familiarize the public with their organization and some of the details of their management; the legal difficulties presented by the various anti-trust laws had been surmounted; and, above all, the public had reached a firm conviction that the profits of combination were enormous. Throughout the hard times which followed the panic of 1893, when competing manufacturers were gasping for breath, the Standard Oil Companies of the several states, and the Sugar, Tobacco, and Rubber companies, experienced little inconvenience. American Sugar, for example, paid 12 per cent on its common stock throughout this period, and its associates were scarcely less fortunate. Controlling the production of necessary production goods—the demand for which was last to be affected—and secure from the attrition of competition, these great corporations presented a startling contrast to the general emaciation. Officials of these companies might ascribe their large profits to the "economies of combination," but the public correctly interpreted this phase of euphony to mean the control of the market which the combination afforded. "Over-production," "the wastes of competition," and such like explanations of the industrial

depression from which the nation was emerging, united to emphasize the advantages of consolidation.

The time was ripe for the universal application of the trust principle to manufacturing industries. On the one hand, the manufacturer was weary of competition and anxious either to combine or sell. On the other hand, stood the public, deeply impressed with the profits of the trust and anxious to buy the shares of industrial combinations if opportunity were given. Into this situation stepped the promoter, to whom a more promising opportunity to sell stocks had never been presented.

The trust movement had not progressed far before cries of extortion and other abuses were raised. This leads us to a discussion of the unfair advantages over their competitors taken by the trusts. This is the kernel of the so-called "trust problem," for it is now generally recognized that the problem of the trust lies in its abuses and not in the fact of combination itself.

299. *Unfair advantages of the trusts—railroad rates.* —These may be discussed under three heads of (1) unfair railroad rates, (2) charging low prices where there is competition and high where there is none, (3) making unfair contracts with retailers.

Whatever may be the present practice of large combinations in reference to unfair railroad rates, it is a matter of common knowledge that one of the biggest factors in the steady ascendency of the Standard Oil Company was its ability to secure lower transportation rates than its competitors. That discriminations have been a factor in the past in hastening centralization in industry is hardly open to question. There is a reasonable ground for belief that large shippers are still being favored by the railroads at the expense of the smaller competitors, though this is now more

difficult to prove. There is no doubt that this belief lies at the basis of much of the popular hostility to the trust, as was witnessed during the famous $29,240,000 fine case against the Standard Oil Company. It is generally felt that the Beef Trust has secured unfair railroad rates through its ownership of refrigeration cars on which the railroad allows an unreasonably high rental deduction.

300. *Discriminating prices.*—On the subject of local price discriminations an abundance of figures are presented by the Industrial Commission. There is, in the first place, a table of monthly prices of standard illuminating oils at New York, Chicago and Cincinnati, for the fifteen-year period 1885–1899; the table was accompanied by the testimony of Mr. Archbold, and is thus above suspicion of prejudice against the Standard Oil Company.

An examination of the table shows that, as a rule, the price at Cincinnati was lower than at Chicago, and at Chicago lower than at New York, which must be accounted for by some permanent reason. Still it appears that on many occasions the situation was reversed. Thus, oil was cheaper at New York than at Chicago in November, 1887; in February and August, 1888; from May to July, 1889, and in November of the same year; in September, 1891, and from November of the same year to January, 1892; in January, May and October, 1893, and from December of the same year to February, 1894; in September of the same year.

The New York price fell below the price at Cincinnati in September and October, 1888; from August to October, 1889, and in December of the same year; in February and March, 1893; in March, 1894; in May and June and from August to October, 1895.

The Chicago price was below that at Cincinnati in May, June and September, 1892; from April to October, 1895; in July, August and October, 1897, and in March, 1898. These fluctuations cannot be adequately accounted for by any other agency than local fluctuations of supply and demand.

In addition to this study of three important markets, extending over a number of years, the Industrial Commission has also a contemporaneous survey of over fifteen hundred local markets, representing every state in the Union and coming from towns of all varieties of size and characteristics.

The information was received in reply to a schedule of inquiries which had been addressed to retail dealers throughout the United States. Four articles were selected, because of the fairly uniform quality of the product—illuminating oil, sugar, salt and Royal Baking Powder—and the grocers were requested to give the prices paid on February 15, 1901, or on the nearest day when purchases of these had been made. Taking illuminating oil, variation in price may proceed from one of the following causes: (1) Difference in cost of production at different sources of supply; (2) freight rates; (3) cost of distribution, which is likely to be in inverse ratio to the quantity sold in any given market; (4) cartage, which is presumably higher in a great city like New York than in a small hamlet. The following table is constructed from the data of the Commission, with a view to eliminating the first two causes of variation; all cities enumerated in the table are supplied by the Standard Oil Company from the same refinery, located at Whiting, Indiana. The last column shows the net price, after deducting freight charges; the cities are arranged in the order of their population:

Cities	Population 1900	Gross price per gal.	Freight per gal.	Net price per gal.
San Francisco, Cal.	342,782	$0.13	$0.05	$0.08
Louisville, Ky.	204,731	.07	.0074	.0626
Indianapolis, Ind.	169,164	.055	.005	.05
Kansas City, Mo	163,752	.085	.017	.068
St. Paul, Minn	163,065	.08	.013	.067
Denver, Col.	133,859	.16	.049	.111
Portland, Oregon	90,426	.14	.05	.09
Seattle, Wash.	80,671	.135	.05	.085
Des Moines, Iowa	62,139	.08	.015	.065
Lincoln, Neb.	40,169	.10	.019	.081
Little Rock, Ark	38,307	.115	.019	.096
Dubuque, Iowa	36,297	.09	.0095	.0805
Madison, Wis.	19,164	.08	.008	.072
Atchison, Kan.	15,729	.095	.017	.078
Vicksburg, Miss.	14,834	.095	.015	.08
Cheyenne, Wyo.	14,087	.16	.049	.111
Sioux Falls, S. D	10,266	.105	.018	.087
Fargo, N. D	9,589	.125	.03	.095

It is evident from this table that neither the size of the market nor the cost of carriage offers a satisfactory explanation of the variations in the net prices of oil. Here are two cities, Indianapolis and Kansas City, substantially alike in population, yet the price at the latter is 36 per cent above that at the former. Little Rock, Ark., and Dubuque., Ia., have also substantially the same population, and yet the price at Little Rock is 1.55 cents per gallon above that at Dubuque. Vicksburg, Miss., and Cheyenne, Wyo., are also equal in rank, and yet there is a difference of 3.1 cents per gallon, or nearly 40 per cent. In a study of the effect of trusts on prices, Professor Jenks shows that frequently there have been very decided lowerings of the prices of trust articles owing to vigorous competition among independents, but that after the source of the price disturbance had been removed the old prices were restored.

301. *Unfair contracts with retailers.*—Under these

contracts the trust constrains jobbers and local dealers to boycott the products of other producers. Thus it was claimed and admitted that the Eastman Kodak Company sold goods at 15 per cent trade discount and an additional discount of 12 per cent to dealers who handled only their goods. It is claimed that the Tobacco Trust as well as the Beef Trust often refused a retailer any of its products on the ground that he handled goods of competing concerns. It was brought out in the recent Supreme Court case which was decided against the so-called Wall Paper Trust that the trust endeavored to stifle "competition by agreements as to selling prices, which were fixed by the directors, and by refusing to sell to any who cut the prices so fixed."

302. *Further causes of popular hostility toward the trusts.*—While the above constitutes what one may term the three main unfair advantages which the trust takes of its rivals, they do not explain all that is popularly included in the so-called "trust problem." The basis of much of the antagonism to the trust comes from: (1) Its real or fancied ability to charge extortionate prices; (2) its influence in politics; and (3) the excessive capitalization of many of the trusts.

First, it is generally conceded that trust prices are somewhat higher than those that would obtain under competitive conditions. The fact that the Standard Oil long paid 40 per cent dividends would seem to warrant such a belief. Professor Jenks in his study of prices comes to the conclusion that while trust prices may not be greatly in excess of what would otherwise be the case, they are somewhat higher.

Second, that our tariffs are more often the result of log-rolling among the big interests than the work of

scientific experts in trade and commercial matters is a subject of common belief and at the basis of much of the prejudice toward the trusts. The tariffs of the past have largely been passed by those deriving the direct benefit from them. Such possibilities do not, in the nature of the case, guarantee anything like equal benefits to all sections of the country, nor is it likely to guard the interests of the consumers along with those of the producers.

Third, the corruption of public officials is not a practice solely connected with corporations, but it is a matter of great import. The dangers that lie in it are so great that an aroused public opinion has forced the political parties of to-day to make public the source of their campaign contributions, and in certain states has compelled the railroads to abolish their system of free passes. The influence of the railroad over political affairs is so great as to elicit the following from the pen of Professor Fetter:

> The wealth and industrial importance of the railroads give them widespread political power in other ways. It is commonly charged in some states that the legislature and the courts are "owned" by the railroads. The railroads, in part because they are victims at times of blackmail by dishonest public officials, are compelled in self-defense to maintain a lobby. The railroad lobby, defensive and offensive, is in many states the all-powerful "third house." Railroads even have their agents in the primaries; they enter political conventions, they dictate nominations from the lowest office up to that of the governor, and they elect judges and legislators. The extent to which this is done differs according as to whether the railroads have large or small interests within the state. How is this great political problem to be met except by an appreciation of its importance and by a growth of public integrity?

The following quotation from a conservative source is hardly less positive:

> Corporate officials, moreover, do not hesitate to do things in the name and under cover of their corporations which they would be ashamed to perform openly for themselves. In the United States, corporations have been guilty of buying legislatures, corrupting judges, bribing juries, entering into agreements with political parties, insuring them certain privileges in return for campaign contributions, and in fact, of every sin of the political calendar. It is owing largely to them that the tone not only of business, but of political morality is much below the standards of private life.

303. *Stock manipulation.*—The last way which we shall discuss in which the corporation affects the interests of the public is in reference to stock manipulation. This is a matter of most far-reaching consequences. Yearly millions of dollars pass from the hands of innocent investors to swell the coffers of those "on the inside" who either know how to manipulate the market, or else have knowledge in their possession from which the public is debarred and by which the "insiders" may profit. Too few are the corporations whose securities are listed on the stock market, which issue financial statements from which the investing public can gain adequate knowledge for a safe investment. The stock market is continually subject to influences causing a rising or falling market, which periodically seems to reach a climax in a panic. A panic, news of bank failure, or sometimes a maliciously circulated rumor starts the price of stocks to falling. Those "on the inside" realize that the time to buy certain stocks is when, after the stock market has been falling for some time, it has about reached its lowest point. The small investor—the man who has

invested all his earnings, accumulated after years of toil, or the woman who has gathered together a few thousand dollars from dressmaking, or teaching, and put her all into buying stocks which she has every reason to consider safe—becomes frightened and sells for fear the price of the stock may even go lower. If they paid $50 per share, they may be glad to throw it on the market at $25 for fear of being compelled later on to accept $15. Meanwhile, those on the "inside" knowing the intrinsic value of the stock, from knowledge which they alone possess, and knowing that its price is bound soon to rise again, are quietly buying all the stock they can get their hands on. Stock that formerly sold for $100 they may perhaps buy at $40.

Then the tide on the stock market begins to turn, and the prices begin gradually to climb up again. Sometimes it is the result of a general return of prosperity. Sometimes, on the other hand, a fictitious value is given to stock by paying dividends out of earnings that should have been expended for renewals and replacements, or through a padded balance sheet. On a rising market those "on the inside" gradually unload their stock at double or triple the price and wait for the next falling market to buy back perhaps the same stock at a half or a third of its recent price. If one "on the inside" puts a million in stock on such a deal, it only requires a comparatively short time before he has two millions in its place.

If a corporation makes a million of profits in a year the community has something to show for it in the line of railroads built, bridges constructed, houses erected, or food produced; but if those "on the inside" make a million in a year, the community has nothing to show

for it but a number of homes in which the security of old age has been wiped away and the present standard of living lowered.

304. *History of trust legislation.*—The history of legislation framed to correct the abuses on monopoly power on the part of industrial combinations resembles the record of acts passed to curb the growing strength of the railroads. In both cases state action preceded federal action, and repeated amendments to the national law have been urged or passed.

The first anti-trust laws were those passed by the various states; Kansas took the lead by passing a law against business corporations in 1889. She was joined by a small number of states the same year. In the first half of 1890 three more states joined the movement. In July of that year the Federal Anti-Trust Act, popularly known as the Sherman Law, was passed. Since then many states followed the examples of their sisters, and of the federal government, and passed anti-trust laws until upward of thirty legislatures have passed laws on the subject. These various state measures were similar in most respects in that they made persons engaged in any combination in restraint of trade liable to fine and imprisonment, and the corporations or firms punishable by loss of charter or of right to carry on business within the state where the offense is committed. The United States Supreme Court held that these laws, applied to any combinations, whether they formed a partial or complete monopoly, were decidedly inequitable. It is now pretty generally conceded that these state laws failed in being too drastic. If they had been enforced to the full letter of the law, much business would have been paralyzed.

305. *The Sherman Anti-Trust Act.*—The Sherman

Act of 1890 declares that "every contract, combination in the form of a trust or otherwise, or conspiracy in restraint of trade, or commerce among the several states or with foreign nations, is illegal," and that "every person who shall monopolize or attempt to monopolize, or combine or conspire with any other person to monopolize, any part of the trade or commerce among the several states or with foreign nations, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by fine not exceeding $5,000 or by imprisonment not exceeding one year, or both said punishments in the discretion of the court."

306. *Enforcement of the Sherman Act.*—Because the legislative authority in the United States is organized on a dual system of National and state sovereignties, the Sherman Anti-Trust Act, although intended to prevent industrial combinations, was at first effectively applied only in the case of railroads and trade unions. The notable instance of this latter was the suppression of the Chicago Railroad strike in 1894, under the provisions of the Federal Anti-Trust Act. This peculiar situation arises from two facts: First, that under the Constitution of the United States Congress has control over the commerce between the states. Interstate commerce is interpreted by the United States Supreme Court as "intercourse and traffic between the citizens or inhabitants of different states," including "not only the transportation of persons and property, but also the purchase, sale, and exchange of commodities." By the terms of the Constitution, the states are barred from any attempt at the regulation of interstate commerce. Second, that under the court's definition of interstate commerce, the business of manufacturing is not included. In so far as the trust is

usually a manufacturing concern, this important part of its activities comes under jurisdiction of state authority. As engaging in interstate commerce, the trust is amenable to the federal government; as a manufacturing concern it is amenable to the state only in which it is located. This situation has made it difficult for Congress to exercise any efficient control over the trusts. The interstate commerce in which they are engaged and over which the Constitution gives Congress control, may be so carried on as to evade practically any prohibition that Congress could make without putting a serious check on all interstate commerce.

The states, on the other hand, are almost as powerless, for although they can control the manufacturing of trust products within their domains, they cannot prevent trusts organized under the laws of other states, and having their plants outside of the states, from shipping their products into the state. If they attempted this they would be interfering with interstate commerce, which is strictly prohibited by the Constitution of the United States. Furthermore, outside the question of legality, any plan of control which rested on state action would probably have the weakness of a lack of uniformity. A chain is no stronger than its weakest link, and so any series of laws passed by the various states would be no more efficient than the regulation in the weakest state. This is at present a problem that has not yet been solved. A state may so liberalize its corporation laws as to afford a veritable asylum for certain trusts; it may even authorize the corporation to do business in every state in the Union except its own, and the other states are powerless to keep out its products, for such an attempt would constitute an interference with interstate commerce. The states with the most

indulgent policies have been New Jersey, Delaware and West Virginia. The usual inducements which are held out consist of light incorporation fees and taxes, the absence of specifications as to character of business or amount of capital stock.. About 95 per cent of existing corporations hold charters granted by one of these three states. Such is the present condition of trust control, or rather the lack of it, with the exception of the important step forward which was taken when the Department of Commerce and Industry was created in 1903.

307. *The Bureau of Corporations.*—This new departure in the line of corporation control aims at correcting certain trust abuses through publicity. Under the above-mentioned department is the Bureau of Corporations, which is charged "to make diligent investigation into the organization, conduct and management, of the business of any corporation, joint stock company, or corporate combination engaged in commerce among the several states or with foreign nations, excepting common carriers . . . and to gather such information and data as will enable the President of the United States to make recommendation to Congress for legislation for the regulation of such commerce."

At the head of this bureau stands the Commissioner of Corporations, who is authorized to subpœna witnesses and to examine whatever books and papers of the trusts are necessary for him to carry out fully the functions of his office. Among the other things which this new department of government has accomplished have been a Report of the Beef Industry, and also the quite recent official investigation on the Transportation of Petroleum.

308. *Future of the trust problem.*—It may not be out of place to note that the field of possible future legisla-

tion is narrowed down to three distinct propositions. First, there is incorporation under federal law. Such a law would have to be purely voluntary, but it is held that enough inducements in the line of legal privileges and immunities could be held out to cause all future corporations to take out federal, instead of state charters, and to cause many now incorporated under state laws to change their charters. The second plan is similar to the first. It proposes a federal franchise or license for permission to engage in interstate commerce. Prohibiting such commerce to all unauthorized corporations would practically bring all those of any magnitude under federal supervision.

The third plan proposes reasonable publicity. The advocates of this plan see in publicity a means of revealing the existence of abnormal income, or other conditions now kept from the investing public. The establishment of the United States Bureau of Corporations has been a step in this direction. Many feel that the work in this direction should be extended, and that the information gathered by this bureau should, within reasonable limits, be open to the public as well as to the President of the United States. One thing is certain, to the future belongs the task of passing laws that are adequate to solve the momentous questions which the corporation and trust have brought us.

The decisions of the United States Supreme Court in 1911 in the cases against the Standard Oil and Tobacco Trusts, by the terms of which these great combinations were compelled to dissolve, illustrate forcibly the great importance of this trust problem.

CHAPTER IV

PROBLEM OF MONOPOLY

309. *Nature of monopoly.*—One of the most interesting problems of economics, as well as one on which there is the greatest difference of authoritative opinion, is that of monopoly. The problem of the trust and that of monopoly should not be confused in thought as identical. Though they usually go hand in hand, one may exist without the other. Monopoly is the broader term of the two and applies equally to the power by which labor unions are able to force up wages as well as to the power which enables railroads "to charge what the traffic will bear" or the trust to reap monopoly profits.

In the popular mind, monopoly is an evil to be destroyed whenever met. It is quite generally believed that the unrestricted exercise of monopoly power can not but result in social injury. Its presence suggests some form of exploitation. This view is furthermore not limited to the lay mind. In the eyes of some economists of note "monopoly checks progress in production and infuses into distribution an element of robbery." In their eyes monopoly is like some foreign substance which may get into the industrial mechanism and prevent its perfect running. Whenever this happens the only wise course is to remove the cause of such friction. This can only be done by restoring once more a condition of free competition. By this method, industry is once more restored to its normal condition. Economists who hold this view of monoply believe that there are certain

fundamental laws in economics which are as universal and permanent as the law of gravitation itself. They maintain that these laws should be allowed to operate unimpeded by any distributing forces such as monopoly and that if they are allowed so to operate, each factor in production will get its just share of the products of industry. Such theory of distribution is based on a belief in a natural law of justice which rewards every man according to his merits. It implies a complete absence of all forms of monopoly. Under such a system, the only prices which it is just to charge either for services or commodities are "cost" prices, i. e., prices in which there is no monopoly element.

310. *Monopoly a universal phenomenon.*—Those who oppose this general view of monopoly contend that there is nothing inherently wrong in the principle of monopoly, that it is a general phenomenon of all economic activities and that practically everybody, laborer, professional man, capitalist and landlord, is a monopolist. In their view, monopoly is the power which enables a man to raise the price of his services or his commodities above that which they "cost" him. A monopolist is, therefore, any one who fixes his price solely with his eye on the market, who sells without having in view any other consideration than his own interest, in other words, one who "charges what the traffic will bear." Under this definition of monopoly the corner grocer who adds a few extra pennies to the price of his articles, because he knows that his customers will pay it rather than go four or five blocks elsewhere, is as much a monopolist as a coal baron. They are monopolists in kind, if not in degree. According to this view, practically every one is a monopolist. Though the extreme concentration of monopoly power in the hands of some may give rise to

serious problems, the monopoly principle, nevertheless, pervades the whole business world, and is not to be condemned on all hands because it may sometimes give rise to evil results.

311. *Monopoly accompanies progress.*—According to this school of thought, monopoly is an inevitable result of progress, and civilization. This truth can best be seen by showing the relation existing between the monopoly fund and the social surplus. One hundred and fifty years ago, before the great Industrial Revolution in England, man's productive power was, relatively speaking, very small. With the great inventions of that period and those subsequently made, with the discoveries of steam and electric power, and their application to industry, with these and like improvements in the arts and sciences, man's productive power has been multiplied from ten to a hundred fold. With the same amount of capital expressed in terms of dollars and cents, and the same amount of human effort man can to-day produce a hundred units of product where formerly he produced but ten. The difference in the productive capacity of the two periods is the result of the growth of the social surplus. If all the products of industry to-day were apportioned among all the persons who were responsible for their creation, no small amount would have to go to the inventors, discoverers and others of the past who have so largely made possible our present high productive power. In the words of Mr. Carnegie, in a recently published essay on "Wealth": "In the world's progress, scientific discoverers and mechanical inventors appeared and adapted the forces and materials of nature to the uses of man, followed by the commercial and industrial age in which we live, in which wealth has been produced as if by magic, and

fallen largely to the captains of industry, greatly to their own surprise. Multi-millionaires, a new genus, have appeared, laden with fortunes of such magnitude as the past knew nothing of."

It has been almost the universal rule of history that the great benefactors of mankind, the inventors and discoverers, have died, with few exceptions, poor men. Much of the present wealth produced is in reality due to the past, but the past is gone and it is therefore not in a position to present a claim on the present products of industry as just as such a claim might be. The present wealth can only be consumed by the present participants in production. This means that every one who is getting some of the product of this social surplus is in reality getting something for which he has not rendered an equivalent service. In so far he is a monopolist because he has departed from the standard of "cost" prices. The social surplus affords thus a kind of monopoly fund on which all the present factors of production are constantly drawing. One group of capitalists tries to increase the share of this fund which it receives by forcing up the price of its particular commodity. If they succeed, another group of monopolists must lose some of the share which they formerly got. If labor is able to combine and successfully raise their wages they are increasing the share of this monopoly fund that they receive and some other group of monopolists suffer a corresponding loss.

Thus, it is contended, monopoly is never destroyed but merely shifted from one group to another or divided between them on a new basis. It by no means follows that if railroads were forced to reduce their freight rates to the lowest possible level that the price of commodities transported would fall as a result, or that

monopoly would be destroyed. A fall in freight rates would merely result in an increase in the value of western farm lands. Part of the income of society would thereby be shifted from one monopoly, the railroad, to another monopoly, the landowner or landlord. Or, to take another illustration of the same principle, if the fare on trolleys running into a suburban district is lowered, it by no means follows that a man renting a house in the suburbs will be any better off financially at the end of the month. Because of the lowered fares, his section of the country now becomes more desirable for homes. Rents increase and instead of paying an extra dollar or two to the railroad monopoly, he now pays it to his landlord.

One thus comes to see that monopoly power is well nigh universal. There are but few classes of society, nay, rather few individuals in any class, who have not been able to get and to keep some portion of the social surplus.

312. *One monopoly feeds on another.*—We may now clearly see the nature of the monopoly problem. Certain classes in the community have obtained more of the social surplus than others. This they have obtained through the larger control which they exert over supply, that is to say, through their superior monopoly power. The American Sugar Refining Company, or the American Tobacco Company, or the Standard Oil Company obtains an advantage over Michael Hertzka, coal miner, because it can exercise a larger control over the supply of its commodities than Michael Hertzka can exert over the supply of his labor, and can, therefore, maintain a higher net income from selling sugar, tobacco, or petroleum than Hertzka can obtain from selling his labor.

In times of depression, when the social purchasing power is reduced, the great companies can reduce their output, and maintain the price of their products at a higher level than the price of the labor of the coal-miner, which may, at such a time, entirely vanish. In the same way, when prosperity returns, and the social income increases, the price of sugar, tobacco and oil rises much more quickly and much higher than the wages of the coal-miner. In this way, by their superior control over supply, the industrial combinations take from the laborer, the farmer, the small artisan, the man on a salary —from every man whose control over the supply of labor or goods is less absolute than theirs—a part of the free income which these factors would obtain but for the fact that, as compared with the trusts, their control over the supply is feeble and ineffective.

313. *Some would apportion the social surplus by law.*—Many serious students of the problem feel that there can be no equalizing of the distribution of the social surplus without calling on the government to set things right by establishing "cost" prices. They accordingly advocate giving to the Interstate Commerce Commission or some like body the rate-making power over the railroad so that "cost" prices for transportation may obtain and all railroad stock dividends arising from monopoly power be prevented. They likewise believe that there is a "natural law" for all wages and that the government should ascertain this natural wage by arbitration commissions. "The state is bound to ascertain and declare what rate is just, to confirm the workers in their positions when they accept it, and to cause them to forfeit their right of tenure if they refuse it. If the workers thus forfeit their claim, their positions are clearly open to whoever will take

them, and the state is bound to protect the men who do this."

314. *Objections to government regulation of prices.* —Those who take the opposing view of monopoly feel that it is illogical for the government to establish prices on a "cost" basis in some cases and not generally. They point out that there are at least four classes of property that gain a relatively large share of the social surplus, namely, the railroads, protected industries, western farms and city land. Why not be logical and have the government establish "cost prices" for at least these four groups? But herein lies the weakness of the whole scheme of government regulation. To carry out the principle of "cost" prices to anything like its logical extent means a task too big and too complex to be considered for a moment. It is wiser to recognize monopoly as a general phenomenon not necessarily an evil in itself, but capable of leading to evil. Instead of destroying the strong monopolists, the aim should be to strengthen the weaker ones so that they may get their share of the social surplus. Instead of saying to the railroads and the farmers, "you shall each receive such and such returns," it is more practical to allow them to adjust the matter between themselves. Instead of saying to labor, "you shall receive such and such a wage, guaranteed to you by law"—it is wiser to encourage them to increase their monopoly power by more thorough unionization and thus get in line for their share of the social surplus. The whole problem is essentially one of equalizing monopoly power.

315. *The interest of consumers in prices.*—It may be asked, has not the general public, or at least the consumer's interests, been ignored in such a view of the case? Are there no restraints in operation to protect his

interests? There is a general protection in the fact that monopolies feed on each other, so to speak. If one monopoly gains, another loses. In addition to this, there are other limitations on the power of monopoly: (1) The extension of the principle of combination to include every industry and all occupations—the universalization of the tendency to consolidation; and (2) the substitution of one good for another, an advance in price being met by a change in the direction of demand.

The trust movement of recent years, which has consolidated the industries of mining and manufacturing, should not be deplored as a social disaster. It should be hailed rather as a social gain, for it has meant a closer approach to an equality of monopoly power. In these lines before the inception of the trust movement, firms and companies were to be found widely differing in their capacity for economical production. The stronger concerns with the best plants and the latest improvements enjoyed a considerable advantage over their weaker competitors. Charging the same price, they were able, through their lower cost of production, to make a large profit, in short, to get for themselves a disproportionate share of such monopoly profits as accrued to the industry to which they belonged. The inclusion of all these plants, both small and great, under the consolidation of a trust, has tended to equalize this advantage and to distribute more widely the increment of monopoly gains. The growth of industrial combination, so far from concentrating, has more widely diffused the power of monopoly, and has equalized the economic advantages which arise from its possession. Producers who were formerly sufferers from monopoly power have now been permanently relieved. They have been taken into the inner circle, and have been admitted

to a share of monopoly power which, under the régime of free competition, they could not have obtained.

316. *The consumer may also be a stockholder.*—It may be contended, however, that the gains to producers from the organization of the trusts have been offset by the losses which the consumers have suffered. On the one side, stand the manufacturers and mine owners, a comparatively small body, firmly organized into large consolidations. On the other side are found the workingmen, the farmers, and the professional men—ninety-nine out of every hundred of the population. These are the consumers, and it is from them that the social surplus is extorted. Here, it is claimed, is the real menace of the trust.

The consumer, however, has other safeguards against the power of monopoly. Owing to the corporate form which all industries have now assumed, and to the growth of the investment habit, he may, as a stockholder, participate in the monopoly gains from which, as a consumer, he may suffer. The wide diffusion of corporation securities is a phenomenon whose existence is not generally known, but which comes to the surface in an unmistakable way whenever hostile legislation threatens corporate profits. In Philadelphia, for example, it is estimated that fully 50,000 voters are stockholders in the municipal monopolies of that city. Probably one-fourth of the people of Philadelphia are directly interested in the monopoly profits to which, as consumers, they contribute. The same policy has long been pursued by the railroads, which have been materially assisted by the savings fund institutions, particularly in the state of New York, where savings banks and trust companies are allowed to invest their funds in approved corporation securities.

The advocates of state socialism would do well to look about them. While they advocate the ownership of natural monopolies by the people, the people have it in their power to take possession as individuals, through the purchase of corporate securities. This movement toward public ownership—for such in fact it is—will progress with the general increase in incomes; and in this way the gains of monopoly will be diffused among an ever-widening circle of shareholders. Again must the trust movement be commended; because, by bringing all manufacturing industry into the corporate form, and hence, imparting to its future a strength and stability which isolated heterogeneity would never have allowed, it has admitted the whole people to share in monopoly profits. As consumers, their free income may be taken from them in the price of commodities; but this is straightway handed back to them in the form of dividends.

Not only as shareholders in existing monopolies may the consumers be compensated for the loss of their free income, but as producers, they may form organizations to dispute for its possession, and force a more equal division. The possibilities of consolidation are almost infinite.

317. *The problem is to universalize monopoly power.* —The universalization of monopoly power, and, by consequence, a closer approach to equality of monopoly advantage, is already in sight. When all producers are closely organized the supply of every commodity will be firmly controlled. What is taken from the laboring man in the price of oil, sugar and coffee, will be restored to him in a higher rate of wages. What the farmer loses in the price of barbed wire and binding twine, will be restored to him in the price of wheat. When all

the productive factors stand on an equal footing, no one will be able to gain any considerable advantage over any other. This monopoly power will never be equally distributed. To expect this would be visionary. But conclusive evidence, accumulating on every hand and in every industry, points to the conclusion that the solution of the problem lies not in the abolition or even the curtailment of monopoly power, but in its general distribution throughout all classes of society.

318. *The power of substitution.*—But the consumer need not rely upon these means of protection against the power of monopoly. He has a more effective remedy constantly at hand, in the power of substitution —a remedy whose application, though requiring a modicum of intelligence, is instantly effective. The sympathetic movement of prices has long been clearly perceived. The prices of wheat, corn and oats move together, no matter in which grain the initial disturbance of the supply and demand relation may have occurred. The prices of all products which are interchangeable in their uses fall in unison.

The application of this law of the sympathetic price movement of substitutes has not been made to the problem of monopoly, yet its application is plain and obvious. Let us proceed by illustration. The monopoly of the anthracite-coal industry has been already referred to. From 1880 to 1898, while general prices fell 40 per cent, the price of anthracite coal at Philadelphia declined from $4.53 to $3.75 or 17 per cent. The consumer was taxed more and more heavily by the coal trust. How did he escape from this situation? By the use of bituminous coal. The almost unlimited area of soft coal land enabled the supply to be increased at will. During this same period, 1889–1898, the price of bituminous

coal in the United States decreased from $3.75 to $1.60 per ton, or 60 per cent, the result of an increase in its supply from 38,200,000 tons in 1880 to 148,700,000 tons in 1898, an increase in per capita consumption of from .76 tons in 1880 to 2 tons in 1898. During the same period the production of anthracite coal increased only from 25,500,000 tons in 1880 to 47,600,000 tons in 1898, an increase in per capita consumption of from .5 ton in 1880 to .6 ton in 1898, or 20 per cent as compared with an increase in the per capita consumption of bituminous coal of 163 per cent.

In other words, during this period of 18 years, the per capita consumption of bituminous coal increased eight times as rapidly as the consumption of anthracite. A constantly increasing proportion of the population have abandoned or decreased their consumption of the monopolized fuel in favor of a cheaper substitute. Along the same line has come the substitution of crushed coke for anthracite coal, and the use of gas and petroleum as fuel. No better illustration of the effectiveness of the power of substitution to curb the power of monopoly could be asked for.

319. *The power of substitution and the price of oil.*— The Standard Oil Company is a monopoly. It has almost absolute control over the price of refined petroleum, and can fix its price at the point of largest monopoly revenue. But this power can only be exercised to the fullest extent in the country and in the smaller towns. On approaching a gas tank or an electric light plant, the price of oil at once declines. The general substitution of gas for oil depends merely on the continuance of the growth of towns into cities and of hamlets into towns. Soft coal is everywhere abundant, and gas can be manufactured at a low price. A few companies, like

the United Gas Improvement Company of Philadelphia, have consciously adopted this policy of substitution, and are rapidly introducing gas as a substitute for anthracite coal and petroleum.

During one of the recent occasions when the price of meat soared to heights that were prohibitive for a great many families, so many persons reduced their daily consumption of meat by substituting other articles of diet for it, that the Beef Trust suffered a loss never to be made up again. People came to see that they could get along on a diet in which meat did not figure three times a day and still keep well, and now when prices soar, the diet of the average person adapts itself accordingly.

Examples of the power of substitution could be indefinitely multiplied. The price of wool is a monopoly price, from whose incidence there seemed to be no way of escape; yet a recent estimate of the National Association of Wool Manufacturers states that the per capita consumption of wool in the grease has decreased from 9.07 pounds in 1890 to 6.7 pounds in 1900, and to 6.4 in 1910, due to substitution of cotton. The monopoly of the copper trust is threatened by the solution of the problem of leaching copper direct from the ore, without the long and expensive operations of roasting and smelting, which confine production to a comparatively small area of high-grade ores easy to be controlled.

There is no need of further illustration. No monopoly is secure in its control, for no monopoly can be protected against the power of substitution. Until bounds are set to the power of invention, and until the possibilities of natural resources are strictly limited, we can never be in serious danger from the tax of monopoly prices. It is true that the exercise of this power of substitution implies a degree of discernment not gen-

coal in the United States decreased from $3.75 to $1.60 per ton, or 60 per cent, the result of an increase in its supply from 38,200,000 tons in 1880 to 148,700,000 tons in 1898, an increase in per capita consumption of from .76 tons in 1880 to 2 tons in 1898. During the same period the production of anthracite coal increased only from 25,500,000 tons in 1880 to 47,600,000 tons in 1898, an increase in per capita consumption of from .5 ton in 1880 to .6 ton in 1898, or 20 per cent as compared with an increase in the per capita consumption of bituminous coal of 163 per cent.

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There is no need of further illustration. No monopoly is secure in its control, for no monopoly can be protected against the power of substitution. Until bounds are set to the power of invention, and until the possibilities of natural resources are strictly limited, we can never be in serious danger from the tax of monopoly prices. It is true that the exercise of this power of substitution implies a degree of discernment not gen-

erally possessed up to this time; but the rapid introduction of substitutes within the last few years, among all classes of consumers, and the fact that many of these substitutes exert their influence upon prices in the field of capital goods, where the people are trained to discover and appreciate them, assure us that the general limitation of the power of monopoly by the power of substitution will not be long delayed.

320. *Social welfare may occasionally compel government regulation of prices.*—There remains but one phase of the general monopoly problem to be discussed. Though one may believe that monopoly is a universal phenomenon and that it is so big a problem that no political party or government could logically carry out a program of establishing "cost" prices on all hands, should one always on that account oppose on general principles any attempt to regulate prices? In a previous illustration in which a decrease in car fares was shown to result in an increase in suburban rents, though the people renting houses out of town found that they had no more in their pocketbook at the end of the month, under one system or the other, the same people did nevertheless gain by the change. Low fares induce people to build their homes over a wider area. They mean less congestion. This is a social gain. Reduced rates for school children would come under the same head. A person might thus conceivably favor a law making possible lower fares in congested districts or school tickets for children without advocating the introduction of a general régime of "cost" prices. In the one case the connection between social welfare and a lower rate is obvious to all. Public opinion in such a case may be crystallized so as to demand a degree of price regulation. It is done, however, not as a part of a general campaign

against all monopoly wherever found, but as a measure whose end is first and last, social welfare. Its object is not to establish "cost" prices but merely to lower a particular rate of charges because of the obvious benefits that would follow.

The general uneasiness excited by the growth of the trusts during the earlier years of the movement has, in the light of experience, somewhat abated. It is now recognized that the trust form of organization is adapted to rather a limited number of businesses, and that only in a few cases can combination actually succeed for any length of time in suppressing competition. At the same time, the reasons for the success of those trusts which have succeeded are coming to be more generally understood and public opinion is being educated to discriminate between the legitimate and illegitimate practices of the combinations. The future of the trusts in the United States depends very largely upon the promptness with which unfair methods of competition are prevented. If effective measures are taken to prevent rate discriminations on the part of the transportation companies and price discriminations and unfair contracts with retailers on the part of the trusts themselves, it is believed that the movement towards combination will be checked, and that such combinations as continue to be effected will have back of them reasons not opposed to public policy. For behind the trust movement are more solid and creditable motives than the activity of unscrupulous promoters and the monopoly hunger of greedy manufacturers. The economies of combination are in many cases both real and substantial and a public policy that opposes all forms of combination is as unenlightened as it must in the long run be futile.

The most effective weapon wielded by the public for dealing with the trusts, as with other actual and potential monopolies, is the consumer's power to substitute other goods for those which the trusts enhance in price. As consumption and processes of production become more varied in their range, this power acquires wider scope. It already effectually precludes excessive

profits to any very large number of businesses and limits the monopoly problem to those few services and commodities which remain indispensable to civilized existence, such as transportation facilities, coal, iron, petroleum, salt, sugar, etc. As time goes on, invention and discovery may still further narrow the list of such articles and services, but probably never to such an extent as to make the monopoly problem one of little importance to the economist.—H. R. Seager, "Economics: Briefer Course," pp. 420–422.

CHAPTER V

SOCIALISM

321. *Social unrest.*—As great as our resources are in this country and as great as our prosperity is, few will contend that we have in America as high a civilization as we are entitled to. There exists in this country unmistakable marks of a vast amount of social unrest. And this social unrest will probably continue to exist just as long as every large city must face its poverty problem, just so long as men die in their prime, leaving wives and children in danger of want, and just so long as accidents, many of which are preventable, make an army of maimed dependents. Though as a nation we are still in our youth, we have already developed the problems of child labor, over-work and congestion. Though the socialist is by no means the only one who protests against these conditions nor the only one who has a program for their amelioration, the name socialism has become so much of a household word as to merit more than passing attention in this connection.

The recent growth of socialism is one of the important phenomena of modern times. Although the socialist party in this country numbers but about a half million, it has attracted to its ranks some capable men from many walks of life. No one can claim to be well informed on the subject until he has a clear perception of the socialist's viewpoint. One may reserve the right of agreeing with him or not, as he in his individual judgment sees fit, but one cannot afford to be ignorant of the

program that he offers. To many the word "socialism" stands in the same category as "anarchy" and that, in the same category as "bomb-throwing." Such confusion of thought is the mark of an untrained mind.

322. *Exploitation.*—The objections which the socialist makes to the present order of things seem to group themselves under five headings. First and foremost, there is his belief in the universality of exploitation. Exploitation consists of getting less in return for your services than you are worth. According to the socialist's use of the term, a day laborer creating in a year $900 worth of value and receiving only $400 in wages is being exploited by the capitalist to the amount of $500. In the eyes of the socialist, exploitation is an inevitable result of a system permitting the private ownership of the tools of production, and the purchase of labor in the same manner as any commodity. The owner of the machine becomes the master, and the worker must accept his pay or starve. Since it is to the interest of the tool owner to get workers at the lowest figure possible, exploitation results.

The second criticism that the socialist urges against the present system is that it permits the growth of monopolies and offers no effective way to check them. Many of the fabulous fortunes of to-day have been made through the monopoly control of articles of general consumption—coal, meat, ice and iron; or through the ownership of monopoly business—street-car lines, telephones, railroads, gas and water supply. The socialist maintains that there is no escape to-day from the monopolist's grip except by state ownership and operation of industry. He believes that it is hopeless, and furthermore, undesirable, to endeavor to restore competition as a regulator of prices. As competition largely gave

way to combination, so he believes state monopolies must succeed private monopolies.

323. *No remedy furnished by individualism.*—The third criticism offered by the socialist is that society lacks a plan for the constructive development of all of its parts. He sees chaos in the present arrangement. The world is a bundle of contradictions to him. In an age of plenty, he still sees the universal specters of poverty, ignorance and crime. Although man has conquered his environment, through harnessing the forces of nature and discovering her deepest secrets in the plant, animal, and mineral worlds, there still await solution the problem of the underfed child, the homeless man, imperfect sanitation, low pay, and lack of employment. Progress is a reality to him, but so is poverty. Wherever he looks he sees good and bad. Whichever it happens to be, seems to him to be but the result of blind chance. Too often the welfare and happiness of many are dependent solely on the accident of birth. The race of life is unequal. Some start with such handicaps as a body under-nourished from infancy, and a mind undeveloped, having nothing beyond the merest rudiments of an education. These are predestined to a life in a factory from the age of thirteen or fourteen, while others have the possibility of a college diploma, and social and business position awaiting them.

324. *Wastefulness of individualism.*—The fourth criticism that the socialist urges against modern society is its wastefulness. Competition is uneconomic; coöperation, economic. Under the competitive system much is done in duplicate and triplicate that could just as well be done once under a system of coöperation. This is particularly true in the distribution of goods for consumption. A half dozen competing hucksters,

milkmen, and icemen, pass over the same route daily when half the number might have distributed the same amount of goods had there been no competition. In the question of milk, meat and like supplies, we can no longer trust to the private business conscience to give us goods free from disease and of unadulterated quality. The government now takes the indirect method of employing a large corps of inspectors merely to go over the work of private competitors, when it might do the work itself.

325. *Competition essentially evil.*—A fifth criticism of the socialist is against the essentially evil nature of competition. In industrial competition he sees a force that calls out all the bad in human nature, while at the same time suppressing much that is good. To beat their competitors and make a profit men adulterate food, employ child labor, violate factory inspection laws, and pay low wages. Competition puts the law-abiding and humane employer at a disadvantage and forces the indifferent employer over into the camp of those who seek success at any price. The socialist points out the fact that many a child-labor battle has been lost in a northern state because the cry was raised by even the most public-spirited employers that their business would be ruined if they had to compete with the low restriction put upon child labor in certain of the cotton manufacturing states of the South.

326. *The socialistic program.*—And so the socialist, weighing the present organization of society in the balance and finding it wanting, comes forward with a plan built on an entirely different basis. He proposes to substitute for the private ownership of all land and capital goods, i. e., factories, railroads, stores, and the like, government ownership and operation. Because under

such a system there would then be no capitalist to demand interest, all the returns of labor would go to labor, and exploitation would cease. As the government would own all the land and natural resources, there would be no monopolist's profits to be paid out of the pockets of consumers. Because competition would be destroyed, there would be no further incentive to adulterate goods, to employ child labor, or for the violation of health and fire ordinances. In place of a society of competing units, each struggling to get the most for himself, the state under socialism, would substitute an orderly plan. Every child would be guaranteed education and support at state expense, and every man in old age after his life work is over, would be an honored pensioner of the government. Instead of working ten and eleven hours a day, the day would be cut in half, through the economics of coöperative action and the absence of social parasites.

Under socialism every one would be a government employé. Instead of working for this corporation, or that entrepreneur, a man would work for the government, much as policemen, letter carriers, and firemen now do. The workman would draw his pay from the state as he draws it from this or that corporation and spend it as he sees fit, except that he could neither speculate in land nor stocks, as they would not be for sale.

The socialist believes that in many ways society has outgrown the institution of private property, just as much as it has outgrown the institution of property in individuals known as slavery. He admits that both may have been valuable at a certain stage in the development of civilization, but that that time is now passed. In attacking the institution of private property it should be

borne in mind that the socialist opposes private ownership of land, natural resources, and tools of production only. Over the ownership of consumption goods, as houses, clothes, food and the like, socialism, unlike communism, would exercise no control.

327. *Socialism and the single tax.*—The socialist, in common with the single taxer, believes that the land is a gift to all from the Creator as much as air or water. He would, therefore, restore it to its original state. He feels, however, that the single taxer stops short in his reform in confining common ownership to only two means of life, farming and mining. He believes that the tools of production are equally, if not more so, means of life than land. Therefore, he contends they should be held in common as much as land and the natural resources. He maintains that social expediency, if not social justice requires as much. Arguing solely from the standpoint of expediency, he contends that if the best interests of society are served by a system of common ownership of its capital goods, then there is no reason why such a system should not be put into operation. Public opinion needs only a little further development. As it is now, there is hardly such a thing as absolute ownership. One may own but he may not or shall not abuse his horse. Even now society has an interest in private property, and the will of the individual must bow to it.

328. *How is socialism to be instituted?*—We are here naturally led to ask, How can this change be wrought and all industry nationalized? This would require the acquisition by the government of not only all land and resources, but also of all railroads and industrial plants. Could this be accomplished with public opinion in its present condition? Such socialists as Mr. H. G. Wells

would answer "No." He writes: "Socialist institutions, as I understand them, are only possible in a civilized state, in a state in which the whole population can read, discuss, participate, and in a considerable measure, understand. Education must precede the socialist state." And again: "I have tried to let it become apparent that while I do firmly believe, not only in the splendor and nobility of the socialist dream, but in its ultimate practicability, I do also recognize quite clearly that with people just as they are now, with their prejudice, their ignorance, their misapprehension, their unchecked vanities and greeds and jealousies, their untutored and misguided instincts, their irrational traditions, no socialist state can exist, no better state can exist than the one we have now with all its squalor and cruelty. Every change in human institutions must happen concurrently with a change in ideas. Upon this plastic, uncertain, teachable thing, human nature, within us and without, we have, if we really contemplate socialism as our achievement, to impose guiding ideas and guiding habits, we have to coördinate all the good will that is active or latent in our world in one constructive plan."

Until this intellectual revolution is accomplished, what is the course open to the socialist by which he may ultimately reach his goal of the complete socializing of industry? The answer is found in the following quotations from a Fabian socialist:

> The peaceful and systematic taking over from private enterprise, by purchase or otherwise, either by national or by the municipal authorities, as may be most convenient, of the great common services of land control, mining, transit, food supply, the drink trade, lighting, force supply, and the like. The systematic raising of the minimum standard of life by factory

and labor legislation, and particularly by the establishment of a minimum wage. These, along with the measures providing a longer school age, public baths, parks, and playgrounds, are some of the immediate lines of action open to the socialist.

Mr. Morris Hillquit, one of the acutest thinkers among American socialists, thus describes the transitional stage:

Modern socialists recognize that social institutions are not the results of arbitrary choice, but of historical growth. When the ever working forces of industrial evolution have created new economic interests and social relations, the political forms of society must be modified to meet these changes, and when these new interests and relations become incompatible with the very basis of the existing social system, that system is bound to give way to a more adequate order. The socialists contend that the present system of individual ownership in the larger and social means of production, and the system of industrial competition based on such individual ownership, have become or are fast becoming incompatible with the interests of an ever growing majority of the population and with the progress of industry itself. They perceive a tendency in the modern industrial development towards the collective ownership of these means of production and the socialization of industries; they see the public necessity of such transformation, and advocate and demand its accomplishment.

That is the whole of the socialist program, and it is certainly wide enough. The transformation of the means of production from private to public ownership is by no means a simple task. It is not reasonable to suppose that the possessing classes, the owners of the land, the mines, railroads and factories, the financiers and capitalists of all descriptions, will some fine day voluntarily surrender all their privileges and possessions to the people, nor is it likely that the transformation will be accomplished by one single and simple decree of the victorious proletariat all over the civilized world. More likely the

process of transformation will be complicated and diversified, and will be marked by a series of economic and social reforms and legislative measures tending to divest the ruling classes of their monopolies, privileges and advantages, step by step, until they are practically shorn of the power to exploit their fellow-men; i. e., until all the important means of production have passed into collective ownership and all the principal industries are reorganized on the basis of socialist coöperation. The proposed measures that are expected to effect this eventual transformation constitute the "immediate" or "transitional" demands of socialism, and are part of the general socialist program, each socialist party emphasizing those points which are of more immediate importance in view of the social and political conditions of its own country at any given time. The measures thus most generally advocated by the socialists are: universal suffrage and equal political rights for men and women; the initiative, referendum, proportional representation in legislative bodies, the right to recall representatives by their constituents; greater autonomy for the municipalities and limitation of the powers and functions of the central government; the abolition of standing armies; progressive reduction of the hours of labor and increase of wages; state employment of the unemployed; state insurance of workingmen in case of accidents and sickness; old age pensions for workingmen; state provisions for all orphans and invalids; abolition of all indirect taxes; a progressive tax on property, income and inheritance; municipal ownership of all municipal utilities; state or national ownership of all mines, means of transportation and communication, and of all industries controlled by monopolies, trusts and combines, and the gradual assumption by the municipality or state of all other industries as soon as they reach a state where they become susceptible of socialization.—Morris Hillquit, "Socialism in Theory and Practice," Chapter V, pp. 100–102.

329. *Reconciliation between socialism and individualism.*—What the ultimate outcome of socialism will be it would indeed be difficult to state. Judging from the

recent trend of thought, it might be safe to predict that public opinion will ultimately come to be much more unified on many of the economic questions involved in socialism. There already seems to be a conciliation going on between those who have hitherto been in opposing schools of thought. The socialist of to-day seems to be more individualistic than his predecessor, while the old-time believer in *laissez faire* has practically disappeared, and his successor, the man who still styles himself an individualist, has become more and more a socialist. The force of this statement can be felt by comparing on one hand the works of such socialists as Marx and Engels with those of H. G. Wells of England, and John Spargo of America, and on the other hand, the works of such an individual as Herbert Spencer with those of Professor Clark or men of the type of Ex-President Roosevelt. This change in a measure is the result of the growth of social consciousness which to-day seems to permeate the atmosphere of modern life. Certainly the political and social sciences are receiving increasing attention from both practical and academic standpoints. The failure of many communistic schemes seems to have impressed on the minds of reformers that in the past they often misread human psychology by allowing no room for the expression of individuality.

From a theory of *laissez faire* we have so enlarged the functions of government that to-day they not only include factory and food inspection, child labor and compulsory education laws, but in some places public ownership and operation of the public utilities of light, water, and street railways. Many thoughtful students of modern problems—men who do not belong to the ranks of the socialists—feel that the time is not far

distant when we shall be compelled to make a change in our present form of inheritance law, whereby vast fortunes are passed on from one generation to another. Some also feel that as a result of the present interest in child labor, women in industry, and the sweating evil, we shall ultimately fix not only the number of hours for work but also the rate of pay for women and children.

330. *Socialists making concessions to individualism.*— These changes would seem to indicate a conciliation that is rapidly being effected. This conciliation is not one-sided. The following from the pen of John Spargo indicates how socialism has abandoned some of its older traditions of substituting at every point state action for that of the individual.

The new society must include at least the following: (1) ownership of all natural resources, such as land, mines, forest, oil wells, and so on; (2) operation of all the means of transportation and communication, other than those of purely personal services; (3) operation of all industrial production involving large capital and associated labor, except where carried on by voluntary, democratic coöperation; (4) organization of all labor essential to the public service, such as the building of schools, hospitals, docks, roads, bridges, sewers, and the like; the construction of all the machinery and plants requisite to the social production and distribution, and of all things necessary for the maintenance of those engaged in such public services as the national defense and all who are wards of the state; (5) a monopoly of the monetary and credit functions, including coinage, mortgaging, and the extension of credit to private enterprise. With these economic activities undertaken by the state, a pure democracy differing vitally from all the class-dominated states of history, private enterprise would by no means be excluded, but limited to an extent making the exploitation of public interests and needs for private gain impossible. Socialism thus

becomes the defender of individual liberty, not its enemy. . . . The future is not a life completely enmeshed in a network of government, but a life with a minimum of restraint.

It is interesting to note in the above that the author only includes under government ownership and operation all industrial production, production involving large capital and associated labor, except where carried on by voluntary, democratic coöperation. The possibility of the social "individualist," and the individualistic socialist some day standing on one and the same platform does not seem far removed when one notes the changes of thought that have occurred in the past century.

331. *H. G. Wells on socialism as social democracy.*—The following, from "New Worlds for Old," by H. G. Wells, shows to how large a degree the modern socialist is trying to remove the name Utopian from his cause—a charge which has kept from his ranks a large number of men of practical affairs.

I myself am the profoundest believer in democracy, in a democracy awake intellectually, conscious and self-disciplined; but so long as this mystic faith in the crowd, this vague, emotional, uncritical way of evading the immense difficulties of organizing just government and a collective will prevails, so long must the socialist project remain not simply an impracticable, but in an illiterate, badly organized community, even a dangerous suggestion. I, as a socialist, am not blind to these possibilities, and it is foolish because a man is in many ways on one's side that one should not call attention to his careless handling of a loaded gun. Social democracy may conceivably become a force that in the sheer power of untutored faith may destroy government and not replace it.

Perhaps the future of the whole socialist movement

cannot be better stated then by again quoting from H. G. Wells:

> The modern socialist considers that this generalization (i. e., of an inevitable class war, of a revolution followed by a millennium) is a little too confident and comprehensive; he perceives that a change in custom, law, or public opinion may delay, arrest or invert the economic process; that socialism may arrive after all not by a social convulsion but by the gradual and detailed concession of its propositions. The Marxist presents dramatically what after all may come, methodically and unromantically, a revolution as orderly and quiet as the precession of the equinoxes. There may be a concentration of capital and a relative impoverishment of the general working mass of people, for example, and yet a general advance in the world's prosperity and a growing sense of social duty in the owners of capital and land may do much to mask this antagonism of class interests and ameliorate its miseries. Moreover, this antagonism itself may, in the end, find adequate discussion and the class war come disguised beyond recognition with hates mitigated by charity, swords beaten into pens, a mere constructive conference between two classes of fairly well-intentioned, albeit perhaps still biased, men and women.

The above quotations indicate the weakness of socialism as an immediate and practical line of action. The acquisition of all tools of production by the government would involve the confiscation of a large amount of property or the taxation of the people in order to buy out the existing owners. As desirable as the government ownership of these tools of production might be from the theory viewpoint, it could hardly be accomplished with human nature and public opinion in anything like its present stage of development. It may be, furthermore, legitimately questioned whether the agencies of the national government, the state or the

municipality are to be trusted to conduct business with the same efficiency and economy as it is conducted under the present system of private ownership. Whatever may be the abuses of the present system, it must be admitted after all that the vast majority of men in the United States are living on a higher standard of living than at any other stage in the world's history and while this fact does not excuse the present evils which exist, nor is a cause for accepting present conditions as all that is to be desired, it does furnish a good reason for considering well before overthrowing our present system of production in its entirety.

Socialism is not new, but is a very old theory that has reappeared constantly in one form or another, at least since the time of Plato. It has been advanced often when a sharp separation between the classes of rich and poor has brought the problem of poverty to the front. Ideals of political or social equality have been another cause of socialistic theories. Plato's "Republic," with its proposals for the extremest subordination of individual life to the direction of the State, has for its background a sharp separation of classes, and a bitter conflict between rich and poor, that occurred not only in Athens but in most of the Grecian cities. In the sixteenth and seventeenth centuries, the social distress caused by widespread economic and political changes led to such works as Sir Thomas More's "Utopia" and Campanella's "City of the Sun." Again, in the eighteenth century, the misery existing in France before the Revolution furnished a fruitful field for socialistic speculations. Finally, since the Industrial Revolution, the increased importance of capital has caused a sharper separation of capitalists and laborers, and has furnished the ground for the growth of modern socialism. This movement has been strengthened by the growth of democratic political ideals.[1]

[1] The student would find it interesting to read PLATO's "Republic"; see JOWETT's "Dialogues of Plato," III. There is hardly a better criticism of

Socialists criticise severely our present methods of producing wealth, and hold that production could be much more efficiently managed under socialism. They urge that competitive methods are "planless." Producers now work at cross purposes; mistakes are common; and our industry is far less productive than it would be if managed on the largest possible scale, in accordance with comprehensive general plans. Secondly, our present competitive methods cause a great deal of waste. Not only have we much unnecessary reduplication of plants, but also needless expenses for advertising, traveling salesmen, and similar purposes. Thirdly, producers have a strong inducement at present to increase the value of their commodities by restricting the output, as is done by the anthracite coal monopoly. Society is poorer on account of the artificial scarcity created in this way. Again, socialists show that there is great waste in our methods of exchanging products. Many more people are engaged in wholesale and retail trade, especially in the latter, than are really needed.

We must admit that there is a great deal of truth in all of these criticisms. But such an admission does not necessarily lead to the acceptance of socialism. For the weakness of socialism is even greater than that of the present system.

1. First of all, will socialism lead men to exert themselves as actively as they do at present under the desire for pecuniary gain? Socialists urge that the desire for social esteem is a powerful motive at present, and would prove still more so under their system. But while many people are influenced by the desire for social esteem, others, apparently, are not deeply affected by this motive. Moreover, social esteem of one kind or another can be gained at present by many actions that do not conduce

socialism than that passed by Aristotle upon Plato's schemes; see Aristotle's "Politics," Bk. II., Chaps. 3 and 5. Plato's "Republic" has been called "the fruitful parent of modern Utopias"; and, after studying it, the student might read the socialistic romances contained in Morley's "Ideal Commonwealths," especially More's "Utopia" and Campanella's "City of the Sun." Then Mr. Bellamy's "Looking Backward," the best known of the romances representing modern socialism, might be read in connection with these earlier writers.

to the real welfare of society; and it is not clear that, under socialism, public opinion would so change that men could not gain notoriety in ways that would be thoroughly harmful. Also socialists claim that altruistic motives may be expected to have greater force under a socialistic *régime*. But we have no experience that justifies us in assuming that the majority of men will, in any immediate future, exert themselves as actively under the influence of such motives as they do at present under the stimulus of self-interest. Of course, the socialistic state might compel men to work. But would such labor be more effective than that of slaves or convicts?

2. The difficulties of organizing and managing all industries on a national scale are enormous. These difficulties would be especially great in industries like agriculture that do not lend themselves readily to large-scale production. Moreover, governmental management presents serious problems, chiefly the difficulty of securing as honest and efficient administration as can be secured by private enterprise, *at its best*. Doubtless our methods of public administration can be improved, and would be further improved before the government should assume the control of industry. But we have no reason to believe that the government could avoid errors, or that, on the whole, it could carry on manufactures and agriculture more successfully than they are conducted at present.

3. Another difficulty that socialism would encounter would be the determination of methods for distributing the labor force among the various employments. Some are much more pleasant or are esteemed more highly than others. Will it be possible for the government to apportion the more important or more desirable positions in such a way as to cause less dissatisfaction than at present? A very important question arises here. By eliminating incompetent persons from the field of competition we manage fairly well at present to secure able management of industries; and we offer the prospect of exceptional profits as a reward for special efficiency. Will the mass of people living under a socialistic government consent, by their votes or otherwise, to adequate methods of securing able business manage-

ment? Taking men as we find them at present, this may well be doubted.—C. J. Bullock, "Introduction to the Study of Economics," pp. 504–508.

THE SOCIALIST'S ECONOMIC ERROR.

It is a fundamental error in analysis to ascribe the value of the products of industry to the labor involved in their production. Value, as already explained, is the joint result of utility and limitation of the supply. Under conditions of free competition value arises because of the cost involved in producing goods. This varies under different natural conditions and consequently rent appears. Under the least favorable natural conditions resorted to cost includes not only labor, but also the sacrifice involved in supplying the capital indispensable to efficient production. The value of the product must be great enough to remunerate workmen *and* capitalists, or the inducement which causes those at the margin of doubt between saving and spending to save will be removed and the fund of capital will be reduced. The payment of interest is as just and, economically, as necessary as the payment of wages. It is the premium industrial society offers to those who will furnish it with the capital it needs and it is never higher than is necessary to secure this capital. It is true that much of the needed capital would be furnished if there were no premium, but it is equally true that many workmen, and especially those whose work is of most value to society, would work for nothing rather than abandon their chosen professions. In each case the reward is determined by the character and motives of the marginal men in the group affected. In each case, moreover, the necessity of rewarding these marginal men gives a value to the product sufficient to reward at the same rate all men in the group. The interest capitalists receive is in no sense subtracted from the reward that goes to labor. It comes from the extra product due to the assistance which capital goods render to production, just as the wages of labor come virtually from the products of labor. In neither case is there any exploitation of one factor by the other.

If this analysis is accurate the whole contention of Marx and his followers falls to the ground, and the present industrial system is cleared at least of the charge of being based on the legalized robbery of the laboring by the propertied class.

Although based on an incorrect analysis of economic relations in its revolutionary form and looking forward to a future so remote as to have little direct bearing on present-day problems in its evolutionary form, socialism is much more than a mere "philosophy of the unsuccessful" or "vision of deluded dreamers." As an ideal it appeals strongly to many men and women who are neither unsuccessful nor dreamers and it supplies them with an excellent standard by which to criticise the undoubted evils in the present economic situation. Such criticism is both helpful and harmful. So far as it serves to concentrate attention upon definite evils and to foster the belief that they are remediable, it is a valuable aid to constructive social reform. So far, however, as it tends to intensify class antagonisms and to teach wage-earners that they are the victims of legalized exploitation and that they must organize to despoil by force the owners of property who oppress them, it is a bar to true progress.—H. R. Seager, "Economics: Briefer Course," pp. 448–9.

CHAPTER VI

LABOR PROBLEM

332. *Nature of the problem.*—The labor problem is the result of two conflicting viewpoints as to the true status of labor in our industrial system. The capitalist says: "Labor is a commodity which I have a right to purchase in the open market at as low a figure as I can."

The laborer says: "I am a copartner with capital in industry and as a copartner am entitled to be heard on the question of how industry shall be conducted—(i. e., on the hours of work, the question of physical safety and insurance) and am entitled to have a voice as to my share in the proceeds of industry."

All the so-called problems of labor, from that of the closed shop, the boycott and restriction of output, to that of the open shop, the black list and pace-setting, result from a lack of harmony between these two viewpoints. The interests of labor and capital may be harmonious in the long run, but as a practical problem, the present interests of employés and the employers often seem to conflict. It is to the immediate interest of the employer to get all out of his men within reasonable limits that he can for as low wages as possible, while the employé is interested in getting as high a return for his services as he can command.

There is thus in the eyes of both groups a see-saw relation between profits and wages. As one goes up, the other correspondingly falls. On this antagonism of immediate interests rests the whole labor problem.

One must face this issue squarely before he can comprehend the labor movement. With the growth of capital and its rapid concentration, labor soon saw that it must accept the commodity status assigned to it by capital or combine as capital had done, and so through the increased power thus gained, assert its claims. The result was the rise of the institution known as the labor union.

333. *Aims of the union.*—Unless one can fully appreciate the fact that the union is one of the great social institutions performing services not now adequately performed by any other social agency, he cannot understand the labor movement—much less criticise it. The more one studies the growth of the labor movement in America, the more one loses patience with the attitude of mind which summarizes its position on the question by merely stating that it is "for or against the unions." That unions are perfect, few will contend; that they are wholly bad, few will admit. That they form one of our great social institutions, with a complexity as great as modern life itself; that they constitute an institution solving its problems slowly and sometimes with mistakes, —all must realize who have examined into the evidence.

The union is reaching down and taking hold of the one sole possession of the great body of men—their labor—and is using its growing power to guard and protect that labor and its possessor so that its return will not only cover the workingman's cost of producing his labor, but will bring to him a larger share of the wealth which he assists in producing.

The union stands as a protest against the condition which obtains in the great industrial city of Pittsburgh, where the wages of a great majority of the laborers employed by the mills is inadequate for the maintenance

of a normal American standard of living; wages adjusted to the single man in the lodging house, not to the responsible head of a family. The trade union recognizes, first of all, that labor has a cost of production just as certain as coal or shoes or any other material commodity. This cost may not be and is not represented in royalties, interest, wages, freight rates, etc., as is the case with the cost of producing coal, but it is made up of items which are just as much subject to definite analysis—of food, clothing and shelter. To meet this cost of producing labor, the only thing the workingman can do is to sell his commodity—his labor—that is, he must apply his physical energy to the transformation of material goods in return for money wages by means of which he secures food, clothing and shelter.

But to reduce wages to its mere cost of production, i. e., to a basis which will just supply the elemental needs of all men of food, clothing and shelter, loses sight of the fact that the laborer is also a man with duties and obligations and rights as a citizen, as a father and husband. The welfare of a nation means nothing, if not the welfare of the people and the vast majority of the nation are dependent for their chief source of income on the wage contract. As Dr. Frank J. Warne points out in impartial and scholarly studies of the unions made at first hand:

> The trade union not only emphasizes higher money wages for the working classes, but it seeks to secure for them better homes, (not merely better houses), lower prices for the commodities they consume, (as through coöperative establishments and by opposition to "company" stores), more opportunities for their children in the schoolhouse, better clothes and food for their wives and children, greater safeguards against injury and death in hazardous employments, insurance and relief benefits, less hours of

work, and innumerable other "rights" which they do not now enjoy and which will ever be denied to them if they themselves do not control, through the trade union, the forces which are ever at work to bring about low wages and adverse conditions of employment. All these and other objects of the trade union have to do with the workingman more as a man than as a producer of labor—as a social animal rather than a labor-producing machine.

A fact which should never be overlooked in discussing the trade union is that it is the only method left to labor whereby it can combat the forces which are ever at work to bring about low wages and adverse conditions of employment. One should dissassociate from the word "forces" as used in the above sense any idea of personality. It is not so much the idea of a personal capitalist "grinding down the faces of the poor" which is at the root of the labor question as it is the fact that some economic forces now at work in this country of their own operation tend to bring about low wages. The law is understood by all business men. It is merely a phase of the general truth that the article offered for sale at the lowest price drives its competitors from the market. Under a free competitive system in the labor market, as would be the case were there no unions, the man with the lowest standard of living must displace the man with the higher standard. This is not necessarily the fault of the employer. Under a competitive system he must get his labor as cheaply as his competitors or he himself is forced to the wall. So that it is largely the economic forces which tend to force wages down which the union opposes. That this is no bit of theory is apparent to all who know anything of the Slav invasion of the anthracite coal mines of Pennsylvania. The whole disturbance in that particular industry culminating in the

famous coal strike of 1902 was the result of a conflict of standards of living—the American and the Slavic—which resulted in each case in a victory for the Slavic until the Union was able after a successful strike to check the tide.

334. *The wage-worker as a bargainer.*—The union principle is that found in the old adage "In union there is strength." Under the conditions of modern industry where all the tools of production are in the hands of one group the single-handed individual laborer is not in a position to make a fair bargain for his wages. A fair bargain implies more or less of equality between those making it. A man who is in a position where he must take either what is offered him or do without, is not in any real sense making a bargain or contract. The union steps in at this point to place labor in a position where it can bargain for itself, for just in proportion as the laborers stand shoulder to shoulder can they make their demands known and felt.

It is hardly conceivable that any group of men struggling to maintain their standard of living, or any group of men unused to power which they suddenly find within their grasp, should at all times act wisely. Nor should we expect among organizations numbering over three million men an equal degree of intelligence, high purpose and lack of ableness. Like all other institutions there may be good and bad organizations among them. It is not the purpose of this chapter to discuss particular unions, nor particular epochs in unionism, but rather to speak of the broad problems of labor.

335. *The closed shop.*—Among the so-called abuses of the union is the policy of the closed shop. It is impossible to pass any general verdict on the justice of this policy. Most Americans are inclined to condemn it off-

hand as an attempt to deprive the non-union man of his "sacred right to work." They forget that the union man enforces the closed shop policy by an exercise of his "sacred right of quitting work." Two equally "sacred and unalienable rights" clash in this contest. The philosophy of social expediency and not the philosophy of rights can decide such a question. All the surrounding circumstances must be gone into before one can justify or condemn the policy of a closed shop. There is nothing inherently wrong in the policy of a closed shop provided it is maintained for lawful ends, chief of which is the guarantee of an American standard of living to American workmen.

336. *The boycott.*—The boycott is another of the so-called abuses of the labor union. It is an organized refusal on the part of a group of persons to buy goods from another person or group of persons. The boycott is thus the weapon of the worker and the general public. Occasionally it is used by business houses against each other, but in general it is confined to the workers and the general public.

A boycott may be of several classes, some of which the courts view as legal and others not. There is first the simple boycott in which a group of workers who have been working for a certain man refuse to buy his products. Boycotts usually originate in this way, but they soon extend to the second form or compound boycott. In a compound boycott the workmen directly interested in injuring the boycotted person or persons, enlist the coöperation of third parties. Instead of the employés of John Smith getting together and refusing to buy his hats, they go out into the highways and byways and advise their friends, relatives and neighbors not to buy hats made by Smith. The third form of boycott is

negative in its effects. It takes the form of a fair list or white list. The union periodical prints a list of firms which are described as "fair," that is, union hours and union wages obtain throughout their plants. The Consumers' League also publishes what they call a "White List," which is a list of firms which do not violate factory laws and which conform to certain regulations prescribed by the League. The fourth form of boycott is the "unfair" list, or, as it has been called, the "we don't patronize" list. The labor periodical, instead of publishing the names of firms who provide fair conditions for their employés, publishes the names of firms who do not provide fair conditions.

The second form of boycott is regarded as a conspiracy. The fourth form of boycott has been prohibited in some cases by the courts. Both forms have developed remarkably and their use has become quite extensive. The power which labor unions derive from using them is in some cases very great. Since some recent court decisions, however, the effectiveness of the boycott from the standpoint of the worker is materially lessened.

The boycott is one of the problems of labor which must be left for settlement to the American's sense of fair play as reflected in the courts. By many employers the boycott is arraigned as among the most "objectionable" features of organized labor. So strong is this feeling that there exists to-day an American Anti-Boycott Association, which is national in scope.

337. *Opposition to machinery.*—It has often been urged against unions that they have opposed the introduction of new machinery and so blocked progress. That this has been true in the past to a certain extent, cannot be denied. That it is becoming less and less

customary is equally true. There is a justifiable ground on which unions may oppose a too rapid introduction of machinery, which temporarily and in particular occupations tends to reduce wages. That the opposition should be to the introduction of new machines at any time or under any conditions cannot be justified from any viewpoint.

338. *Efforts to restrict trade unions.*—These have been largely through the courts and through employers' associations. (a) Through the courts: This has been by the instrumentality of the injunction, which is an order of the court commanding a person or group of persons to refrain from doing the thing or things specified in the order. It is issued on the ground of preventing damages which would be irreparable if the case were permitted to go through the regular processes of law.

The injunction is a most effective means by which to control the actions of strikers. In every strike some kind of coercion is resorted to. This coercion varies from the peaceful visit to a strike-breaker's house, and an argument which aims to convince him that he should join the union or at least cease breaking the strike, to the riot or some other form of physical violence against the person of the strike breaker. In many strikes the violence extends to the property of the employer as well as to the body of the strike breaker.

The injunction is effective because it must be obeyed absolutely. There is no process of law involved in forcing this obedience. The court is the direct agent of the executive and legislative authorities in this respect, and its orders are backed by all the power of the state or nation.

The punishment for offenses against injunctions is limited only by the discretion of the court. There is

no limit governing the severity of penalties, other than the desire of the judge to enforce obedience to his orders. The penalties may be reviewed by a higher court, but the latter hesitates to overrule the attempts of a colleague to punish "contempt of court."

While the injunction is thus cited by the employer as the most valuable and most effective means of protecting his property against strikers, it is in the same proportion opposed by the labor union. The injunction has proved a most effective weapon in overthrowing union control. The power of the union rests on two things: First, the right of the members to bargain collectively with the employer; and, second, the power to enforce demands by a strike which has at least a reasonable chance of being successful. The use of the injunction to restrain the strikers has taken from them the opportunity of resorting to many acts which were ordinarily used as the weapons for winning strikes. By decreasing the possibility of successful strikes, the court has decreased the possibility of effective trade unions. The foundation of the trade union is at stake, and the whole energy of the union is bent against "government by injunction." In proportion as the employers have resorted to injunction and secured from the various courts an extension of its scope, the various unions have opposed its use constantly and bitterly, and have been for some time endeavoring to secure a federal law which would prevent the forms of injunctions which have been so disastrous to labor union interests.

(b) Through employers' associations: The last decade has seen the rise of associations among employers to curb the growing power of the unions. Formerly there were times when one employer would welcome and even encourage a strike against a rival concern for the

purpose of embarrassing him. They soon learned that such practice did not pay, as a successful strike in a rival plant but paved a way for successful strike in their own. As an outcome we have the rise of employers' associations, which fight labor organizations with their own weapons, matching the lockout against the strike, the black list against the boycott, and the "labor bureau" against the "unfair list" of the trades union journals. Most of the employers' associations have associated themselves for common action in a large national federation, the Citizen's Industrial Association of America, in which in December, 1903, there were affiliated sixty national employers' associations, sixty-six state and district associations, and three hundred and thirty-five local or municipal associations of employers.

One of the most prominent of these associations is that known as the National Association of Manufacturers, representing many of the prominent manufacturing interests of the country. In 1907 a fund of a million and a half dollars was agreed upon as a requisite amount for the expenditures necessary for the next three years in carrying on their campaign of education. They stand opposed to many practices of the union and desire to see an increase in technical education throughout the country. They hope to win the public to their viewpoint by instituting a series of lectures and printing numerous tracts on the subject. Some of the men who are most prominent and active in this association have been fighting vigorously for many years against labor strikes and boycotts.

Some other of employers' associations assume a more militant attitude than the National Association of Manufacturers and may be correctly described as "union smashers." Such associations have little regard for

the establishment of sound principles of collective bargaining, and they are usually violently opposed to any recognition of organized labor; their aim is to weaken and harass their enemy, the labor organization, whenever possible.

339. *Methods of conciliation and arbitration.*—From the standpoint of the employer, the employé and the general public strikes and lockouts are far from unmixed blessings. The end that they intend to accomplish may be good, but the means are wasteful and uneconomic. Production ceases, profits and wages stop, property may be destroyed, and the public is deprived of some article of consumption or else compelled to pay a higher price for it. Such being the case, it is not surprising that steps should early be taken to avoid a method of settling industrial disputes analogous in some ways to settling breaches of contract by street fights. Many schemes have, in fact, been proposed, and they group themselves under four headings, the first of which is the trade agreement. The trade agreement is merely a collective bargain. Once a year or once every two years a committee appointed by the employers meet one appointed by the workers, and these two committees go over the question of wages, hours, and working conditions, discuss the outlook, and decide on the conditions which shall govern the trade during the period of a year or for as long as the agreement may be made. At the end of this time another session is held, the committees go over the ground again, and endeavor to reach a conclusion for the succeeding period. This method of avoiding strikes has proved effectual in many cases which involve reliable unions, such as railroad brotherhoods, the boot and shoe workers, the miner's unions and many others. A large number of union differences are settled

quietly by means of collective bargains or trade settlements for specific periods, which are renewed from time to time as they fall due. By such a simple method as this, peace in the coal fields of Pennsylvania was again assured in 1909 for at least the next three years, by an agreement entered into by the coal operators and the representative of the miner's union.

If it can be put into practice, the collective bargain is, after all, the ideal method of settling labor disputes. No outside labor force need be imposed, and the two parties by getting together can settle their difference in a way satisfactory to both. Now and then a disagreement and a strike may result from this method of bargaining, but as a rule it works in a most commendable way.

The second form of strike preventive is the voluntary submission of the points at issue to an arbitration board of three members, one appointed by the workers, one appointed by the employers, and the third selected by these two. This method of settling differences is much less satisfactory than the trade agreement, and the conclusion is reached by third parties who are not always directly interested in the problems, and both of the contending elements may therefore be dissatisfied with the result. This form of voluntary arbitration is negligible in its importance so far as labor disputes are concerned.

The third form of strike preventive is the voluntary state board of arbitration. This form, which has been fairly well worked out in some of the American states, provides that the governor of the state shall appoint a number of men in the various districts who are always prepared to act as a board of arbitration, provided one or, in some cases, both of the parties in the controversy request the state board to act. Except in a few cases this

form of arbitration is likewise unsatisfactory and is seldom resorted to.

The fourth form of strike preventive is compulsory arbitration, a distinctively Australasian experiment. Under this method of settling difficulties strikes and lockouts are forbidden under penalty. When industrial questions arise, they must be submitted to the properly constituted local authorities, who decide the points at issue in exactly the same way as a court of law decides legal points. The advocates of this system of compulsory arbitration hold that it is just as ridiculous to allow a trade union and an employer to fight out their differences as it would be to allow a man whose contract had been broken to go out and thrash the man who was guilty of breach of contract. In both cases the power of the state should be invoked to punish the offender and to do justice to the person injured. The Australasian system is merely a system of individual judiciary worked out on the same principles as the law courts and having jurisdiction over disputes between employer and employés.

Whatever shall prove to be the ultimate method of settling industrial disputes, certain it is that we are approaching the time when the decisions shall rest more and more on an appeal to reason and less and less on an appeal to force. The labor problem is too momentous an issue to be decided on other than the most enlightened grounds. In its proper solution rests the progress and prosperity of the whole nation. The American labor force is the cornerstone of our greatness. It is our most valuable resource and any nation which exploits its resources with no thought of the morrow must ultimately pay the penalty—especially if that resource be labor.

QUIZ QUESTIONS

(The numbers refer to the numbered sections in the text)

PART I: PRODUCTION

CHAPTER I

1. Define economics. Define wealth. What is the distinction between free and economic goods?

2. Describe the origin of private property. What does Blackstone mean by "community of ownership?"

3. What are the provisions of the right of private property? What restrictions does society impose on this right? Illustrate why?

4. How does the state limit the right of private property?

5. What effect have public improvements upon the right of private property? Why does not this seem a restraint? Explain the doctrine of "eminent domain."

6. How do the rights of private property affect individuals? Why is it that men will not produce more than they need? Show the effect of immigration, using a bank as an illustration.

CHAPTER II

7. What is the distinction between utility and usefulness? Define and illustrate an act of production.

8. Describe the four principal forms of production and give illustrations of each.

9. Explain time utility.

10. Define and illustrate possession utility.

11. What are the agents or factors in production? Which are primary and which are secondary?

CHAPTER III

12. What function does Nature perform in the production of wealth? Define what is meant by "free goods of Nature," and show how their supply affects human progress.

13. Give changes in form and place required by production. Upon what does the industrial future of this country depend?

14. What part does Nature play in production? What is the most important natural source of power in this age?

15. What other properties of goods affect production?

CHAPTER IV

16. Define labor. Is it possible to discriminate between the respective contributions of brain and muscle?

17. What is the effect of labor upon production? According to Mill upon what does man's labor depend for its results?

18. What qualities determine efficiency? Under what three heads are they classed?

19. Upon what does physical efficiency of labor depend? To what movement has a realization of this given rise? Where did it originate?

20. Give the important results of this movement upon the industrial world. What has been done to better hygienic conditions?

21. What does Mr. Outerbridge say as to the improved systems of industrial management? Does he base his views entirely upon philanthropic grounds? If not, why?

22. In what respects does the state protect the welfare of employés. Is the legislation uniform throughout the United States? What are the four important restrictions on child labor?

23. Do employers further their interests by possessing the good will of their employés? What should and should not be considered the duties of the employer to his employés?

CHAPTER V

24. What are the effects of inheritance upon the mental efficiency of labor? of education? of a good home?

25. What is the capital value of (1) unskilled labor; (2) shop trained or apprentice; (3) trained in trade schools; (4) educated in higher technical schools? What conclusion do you draw from these figures?

26. Why can a technically trained man command a high salary? What does this fact illustrate?

27. What is the effect of preliminary training in the field of business? What is reasoning? How does the power to reason influence success in business?

28. What is the present relation in the United States

between the modern commercial and industrial undertakings and the universities?

29. What evil effect have modern industrial methods had upon labor? What has been done to remedy it?

30. Describe the first-class apprentice system. What are the other classes? What positions do men from each of the three classes fill?

31. What is the form of preliminary training for shop superintendents? What is its chief advantage?

32. Generally speaking, upon what does a laborer's honesty depend? Upon what does his ambition depend?

CHAPTER VI

33. Is the labor of women and children economical? Why is the inefficiency of woman and child labor no bar to their employment? What does the census of 1900 show as to child labor? Why is the child labor problem in the South particularly difficult?

34. What are the moral and physical effects of child labor? What essential feature in modern factory work is particularly harmful to the child?

35. What are the indirect effects of child labor upon industry?

36. Why is child labor more prevalent in new industries? In what two ways may child labor be considered cheap?

37. Is the entrance of women into industry comparatively recent? What are the causes of this entrance? What is meant by the standardization of industry?

38. Why can women work for lower wages than men? What types of industry have women found it easiest to enter?

39. What change in industrial conditions has led to the great influx of women into factories? Illustrate.

40. Give five arguments against woman's labor.

41. Give eight arguments in favor of women in industry.

CHAPTER VII

42. Compare primitive man with civilized man. What has spanned the gulf between the two?

43. What does the United States Census Bureau state as the wealth of this country? Into what subdivisions is the capital of the United States divided? Distinguish between consumption goods and capital goods.

44. What is the service of capital in production? What methods of production illustrated in the quotation may be considered capitalistic?

45. What is the relation between the efficiency of capitalistic production and its indirection? What is meant by the direct method of production and by the indirect? Illustrate the difference.

46. Show how a fishing vessel illustrates capitalistic production.

47. What long series of productive acts might be caused by an increase of the flour trade between China and the United States?

48. Define saving. What does the production of consumable goods necessitate?

49. In what way does the amount of saving depend on the financial condition of the country? Illustrate.

50. Why is saving necessary?

51. What are the two important expense accounts on

the books of all railroads? What form of saving do they illustrate? What is the underlying principle?

52. What is meant by depreciation? Illustrate. Why is depreciation difficult to estimate?

53. What is meant by the consumption of capital?

54. Distinguish between productive and unproductive consumption. In what way may the statement that the expense of war is unproductive consumption be qualified.

55. Show the difference between the economically useless man and the economically useful.

CHAPTER VIII

56. What are the three factors in production? Can they effect anything in production singly? What is meant by the division of labor?

57. Show how the three factors of production are combined in each of the eight processes in the manufacture of woolen goods. How does Adam Smith illustrate the advantages of the division of labor?

58. What is the universal characteristic of modern industry? In what forms has the division of labor existed from the beginning of industrial civilization?

59. How does the division of labor increase the effectiveness of production? What are the three advantages of the division of labor discussed by Adam Smith. Illustrate each one.

60. How has increased specialization affected the period of preparation? What type of labor has been gradually superseded by the improvement in machine processes? Illustrate.

61. Show how the extreme specialization in the meat-packing industry is one made on the basis of skill.

62. What are the three economies affected by division of labor? Show how the first two bring about the third.

63. Why is specialization deplored? How can it be remedied and what is its great advantage?

64. Is specialization confined to individual employment? If not, why not? How can specialized industry meet sudden demand in the market?

65. Illustrate the effect specialization has upon costs.

66. Show the difference in cost where different machinery and different processes are used.

67. Give an illustration from the manufacture of incandescent burners.

68. What is meant by continuous processes? How are they made possible? Illustrate.

CHAPTER IX

69. What is the effect of the location of an industry on its productivity? What determines the location of industry? What freight regulations have great influence on the location of industry?

70. What part does climate play in the location of industry? In what way may the climate handicap an industry?

71. What influence does the perishability of materials have upon the location of industry?

72. How does the supply of fuel and water-power affect the location of industries? What new source of power is having an increasingly important bearing upon the location of industry?

73. What phase of industry does the Armour's packing plant illustrate? Give an instance of the utilization of surplus labor?

74. Show what kinds of industries have their locations influenced by the residence of the consumer.

75. Show how specialization of labor may determine the location of an industry.

76. What types of industry are influenced in their location by the cheapness of labor? What is the "sweating" system?

77. Upon what general principle does industry tend to arrange itself? What are the reasons for the operation of this principle?

78. Give the main reasons for Pittsburgh's importance as the center of the iron and steel trade?

79. Why is coke the best fuel for iron smelting?

CHAPTER X

80. Define large-scale production. Why is the term an indefinite one? Give an illustration of large-scale production. What has made large-scale production possible?

81. What effect has large-scale production had upon the centralization of industry? Illustrate.

82. What are the advantages of large-scale production? Is large-scale production dependent on division of labor?

83. In large-scale production is there a waste of by-products? What advantages does the large-scale producer enjoy as to improved methods? What is the chief economy of large-scale production?

84. What are the essential differences between large and small concerns? Illustrate.

85. In introducing new functions into his business what does the large-scale producer expect to accomplish? When is it practical to do so?

86. What are the chief causes of the development of large-scale production? What influence has the modern transportation system had upon large-scale production?

PART II: EXCHANGE

CHAPTER I

87. What was the average output of the individual laborer in 1900? What did these figures prove? Why does the division of labor necessitate the exchange of products? What are the advantages of a facile exchange?

88. What are the two forms of exchange? Is the first form of the exchange advantageous? Give reasons for your answer. What would be its effect upon the division of labor?

89. What is meant by a medium of exchange? What led to its being employed? What are the four functions of money?

90. Give examples of early forms of media of exchange. What requirements did they fulfill?

91. Give the characteristics of a medium of exchange. Show reason for each characteristic. What has been found to be the most acceptable medium of exchange? Why?

CHAPTER II

92. What is meant by a unit of value? Is it uniform throughout the world? What is the standard dollar?

93. By what do gold coins in the United States measure their value? What are the three classes of paper money used in the United States?

94. What can be said of the relative exchange value of paper money and coin in the United States? Why is paper money taken as an equivalent of gold?

95. How are national bank notes kept at par with gold? What are the three reasons for public confidence in the ability of the government to keep all kinds of money at par with gold?

96. What is meant by bimetallism? What part has it played in the United States monetary system? What are the two uses of precious metals? How is their value regulated?

97. What has been the history of the double standard in Europe as well as America? What has been the result?

98. Distinguish between convertible and non-convertible paper. What is the effect upon prices of the issue of non-convertible paper? How may it disturb foreign commerce?

99. How long did a paper basis exist in the United States? What was its effect upon the value of a dollar and upon prices and wages in general? How and when was paper money redeemed?

CHAPTER III

100. What is the most important factor in exchange? Define credit in its various forms.

101. What are the functions of a bank? What is the actual process of lending money as engaged in by banks? What two courses are open to the borrower? Are checks legal tender?

102. What is the result of the use of credit as a medium of exchange? Illustrate.

103. What is the clearing house? How does it facilitate exchange? Illustrate.

104. How can a bank use checks above the value of its deposits. What are the credit funds of a bank?

105. What limits a bank's issue of promises to pay?

106. To what extent are promises to pay used? Why are these promises to pay taken as equivalent to gold? How large a percentage of the whole number of exchanges is performed by the uses of credit?

107. What are the reasons for public confidence in a bank's credit? Show that the basis of confidence in a bank's credit is almost identical with that of government credit. What are the divisions of medium of exchange in the United States?

CHAPTER IV

108. Under what law are most large banks organized? Give the principal features of our national banking system.

109. What are the powers of national banks? Why are they not allowed to hold real estate except under certain conditions? What are the regulations concerning United States bonds which banks must observe? To what are they entitled thereby? Why did the government encourage the formation of national banks?

110. What is meant by national bank reserve? What is the regulation concerning the banks not in reserve cities? Who conducts the business of a bank? What are the liabilities of the stockholders of a bank?

111. To what extent is the Bank of England under national control? How great is its cash reserve?

112. In what way is the Bank of France dependent on the government? What amount of reserve does it keep? Why?

113. What is the organization of the Imperial Bank of Germany? What are the regulations concerning note issue by independent banks in relation to the Imperial Bank? How is the Imperial Bank controlled?

114. What has been shown to be the attitude of the four governments (United States, England, France and Germany) concerning the issue of bank notes? How has each safeguarded its banking system in this respect?

115. What has been recently proposed in the United States concerning the issue of bank notes? Illustrate the causes and effect of a stringent money market. What are the proposed remedies? What does Professor Johnson say as to the effect of asset bank notes?

CHAPTER V

116. Define value from an economic view. What is meant by marginal utility? Illustrate. What relation does it bear to value? Show how the value of a commodity is affected by demand and supply.

117. In what is the value of a commodity always expressed? Illustrate the fact that money is the only medium of exchange in modern business. Properly speaking, is money the thing toward which the producer is working?

118. What is expressed by the price of a commodity? What is the incentive to economic activity? How is such activity rewarded? Distinguish between cost and price. What makes up the former? Which of these two is subject to the greatest fluctuations? What in-

fluence does this fact have upon profits? What conclusion may be drawn as to the relation between prices and profits? What is meant by a change in the level of prices? What four circumstances are responsible for the disturbing effect of a change in the value of the standard? Show why this is so. Is a rise or fall of prices usually uniform? What disadvantages arise from this fact? According to Professor Johnson, what would constitute the industrial millennium? Under what delusions concerning money and prices does the business man labor?

119. Upon what do prices depend? Illustrate the price-making process. What are the functions of the Chicago Board of Trade? Show by an illustration how prices are determined in actual practice.

120. What factors does the broker take into account in estimating the supply of wheat? How does the condition of the money market influence the supply? What is a call loan? Why does the business man borrow?

121. What are the factors influencing demand?

122. Ordinarily how do these factors operate? Illustrate. Are prices sometimes affected when these factors come into operation? Give reasons for your answer? What can be said as to the stability or instability of prices?

123. What is the ultimate factor in determining prices? What is the upper limit of prices? What is the lower limit? What happens when the lower limit is reached? Illustrate the effect of declining prices upon production.

124. What has been the fluctuation of prices since 1850? What has been the cause of this fluctuation? Why are the fluctuations of price likely to continue?

CHAPTER VI

125. What is the international medium of exchange? In international payments are there large shipments of gold?

126. What is meant by the statement that Fall River is a cotton city? In what ways is domestic exchange affected? What conclusion is reached as to the payment for domestic imports and exports?

127. How does the method of domestic exchange correspond to the method of international exchange?

128. In what two ways can debts between two countries be liquidated? What method is usually employed?

129. Explain the working process of buying and selling foreign credit? Show how they correspond to methods employed in domestic business.

130. How do Americans traveling in Europe settle their bills? What other foreign payments does the United States make?

131. Why must the United States export a large surplus of commodities? Give statistics.

132. What is meant by the international income account? What appears on the debit side and what on the credit? Give reasons for fluctuation in the value of foreign exchanges. What are the limits within which the value of exchange may vary?

PART III: DISTRIBUTION

CHAPTER I

133. Give an illustration of the united working of the three factors of production. What are the four interests in every business?

134. What is the entrepreneur? What is his function in the business world? What is his relation to distribution of the social income?

135. What are the three forms the entrepreneur may assume? Why is individual ownership undesirable?

136. What is a partnership? How is it formed? What are the articles on co-partnership? How are they drawn up?

137. What are the five kinds of partners and the characteristics of each? What are the liabilities and rights of a partner? What is meant by the capital of the partnership? Why is the name of a partnership protected by law?

138. What is the most important obligation which partners owe to each other? What are the limitations of a partner's authority? How are proceedings against partnerships carried on?

139. How can a partnership be dissolved?

140. Define a corporation. What are its powers and liabilities? What is the relation between stockholders, directors and management? What is a charter of a corporation? What powers have the directors?

141. What are the advantages of a corporation over a partnership? How is the control of corporate affairs held?

142. What is the most important advantage of a corporation? Is a corporation a popular form of business organization in the United States?

143. Show by an illustration from the Reading Coal and Iron Company how an industrial income may be distributed.

144. What are the five general heads under which distribution is made.

CHAPTER II

145. What is one of America's distinctive contributions to the business world? What is the chief function of the organizer? What type of man makes the best organizer?

146. What knowledge must the organizer possess?

147. What industrial conditions in the United States are the result of the work of organizers? What is his position in and importance to the community? In what way has he abused his position?

148. How does the modern organizer win his place?

149. What relation does the manager bear to the organizer? What are the duties of the manager? Why is his position less difficult than that of the organizer?

150. How are managers trained in the United States? Show how industrial conditions are favorable to the development of managers.

151. What are the duties of a boss? What methods does the boss employ to increase products? What type of man makes an efficient boss?

152. Name five classes of employés usually found in every business. What is the distinction between skilled and unskilled labor?

153. What are the classes of unskilled labor? Under what management and supervision do they work most successfully?

CHAPTER III

154. Define wages. Distinguish between real and money wages. What is the relation of wages to prices? How does this explain the difference in country and city wages?

155. Does the Transvaal afford an excellent illustration of the influence of prices upon wages? Why is it necessary to import negroes to work mines in the Transvaal?

156. How do fees differ from wages?

157. What fixes the rate of wages? What determines the lower limit of the rate of wages?

158. Upon what does the demand for labor of each class depend? What influence do modern systems for cost keeping have upon efficiency?

159. How does the condition of the market affect the demand for labor? Show how competition between employers acts upon the demand for labor.

160. What is meant by the supply of labor? What is the chief source of unskilled labor in the United States? What influence has this fact had upon immigration laws?

161. What figures are given concerning the number of immigrants in the United States? What may be said for the average immigrant? Does the immigrant rise in the ranks of skilled labor?

162. What factors affect the supply of labor? Illustrate. What is the relation between business depression and deficiency of labor?

163. Upon what does the supply of labor in each class depend? Illustrate.

164. Give the qualifications for the unskilled laborers. Give the qualifications for a good section hand on a railroad. Give the qualifications for a railway engineer. Show how these qualifications influence the supply of labor in each class. Show their relation to the profits of the concern.

165. Give the qualifications for a railway traffic manager. What is the relation of salary to the actual value of his services?

166. What has been the career of most railroad presidents?

CHAPTER IV

167. What is meant by standard rates of wages? What is the effect of standard rates on efficiency? What would be the ideal method of paying wages? Why? How are the fixed expenses per unit of product ascertained?

168. Give statistics showing loss of time through idleness in any factory. What is the best way to remedy this? Will supervision do so?

169. What are the three systems of wage payment calculated to increase efficiency? What are the objections to profit-sharing?

170. Why is profit-sharing unfair to the employer?

171. In what kind of industries does the piece work system operate with most success? Why?

172. What is the serious objection to piece work? What makes this system unpopular with employés? What often gives the employé an unfair advantage over the employer under the piece work system?

173. What is the best method of increasing an employé's efficiency? What is the premium system? Illustrate the difference between the premium system and the piece work system.

174. Show how the premium system operates upon the introduction of new methods.

175. What is the effect of this system on the machinery? How have improved machine methods bettered the condition of the employé?

176. In what two ways does the risk incurred in certain operations influence the supply of labor? Illustrate the dangers met with in coal mining. What wages should the miner command?

177. What is the effect of the manufacture of bleaching powder upon the laborer?

178. What has the chance of success to do with the supply of labor? Illustrate the effect of social position on the supply of labor. What influence does an opportunity for advancement have upon the supply of labor? How do these three factors affect wages? What is the effect of the sole or partial dependence of labor on wages?

179. Do women's wages illustrate this dependence of labor on wages? How does the sweating system bear upon the matter? What other factors determine the rate of wages paid to women? Why do women teachers not receive the same wages as men?

CHAPTER V

180. Give the definition of and purpose of the trade union. What is the justification for the trade union? What are the two kinds of trade unions? Illustrate each.

181. Show the resemblance between the general scheme of organization of a trade union and our political organizations. What does the jurisdiction of each branch of a union include? Why are there subdistrict unions?

182. What is the relation of the individual member to the union? Is it a democratic organization?

183. What are the powers, functions and proceedings of a convention of the national union?

184. According to the preamble of the Constitution of the United Mine Workers' Organization, what is the general purpose of the trade union? What objects are included under this general purpose?

185. What is the endeavor of the trade union in regard to the wages of its members? Give the main provisions of an agreement between employer and employés as settled by the union. What is the legal status of the unincorporated trade union? Why do employés favor the method of collective bargaining?

186. What is the chief concern of the local union? What is a walking delegate? What happens if the local union does not settle the matters with the employer?

187. What is a strike? In a strike what is the first business of the union? How is it accomplished?

188. What is meant by picketing and what is its purpose? Illustrate.

189. What are the social forces brought to bear on certain cases by the union? What term of reproach has been coined by the union?

190. Give an illustration of the ostracizing power of the union? What forms does the persecution of the "scab" take?

191. Why is a strike a powerful weapon in the hands of the union? What are meant by defense funds?

192. What is the success of the strike dependent upon very largely? Under the system of competition, what disadvantage does the employer face?

193. Under a system of competition what advantage does the union take of the employer? In the absence of competition how would employers be inclined to act toward the union?

194. Why is common action among employers impossible? Why is combination of employers desirable?

195. Why is collective bargaining a better method of settling difficulties between employé and employer than the strike? Should the state interfere in such matters?

196. What are some of the minor activities of the trade union? In what way do they restrict the supply of labor?

197. What is the employer's attitude toward the closed shop? What does one employer say of the "closed shop"?

198. What constitutes the most serious indictment against labor organizations? Give illustration of the unreasonable demands of a union.

199. How may a union limit the output? What is the union's attitude towards labor-saving machinery? What defense do they make for this attitude? What can be said of the validity of this defense?

200. Does the union favor the best method of increasing wages? What is the most promising field for the development of trade unions? Give an example of what has been done here in this field.

CHAPTER VI

201. Define rent. What is a lease? Give examples of the different kinds of leases.

202. Give the various forms of rent payments. Illustrate each. On what basis are mineral royalties fixed?

203. How does a tenant go about the management of a farm? What sum will he pay as rent?

204. What are the primary causes determining agricultural rent? What beside the fertility of the soil is of importance in determining rent?

205. Show the influence of price on rent.

206. Why does land in the neighborhood of large cities command large rentals? What has diminished the importance of location in relation to rent?

207. What determines the rent of mines? Give an example.

208. How are ground rents determined? What is the value of land used for building purposes based upon? How do incomes from ground rents vary? Give the various grades of ground rentals. In the location of retail stores what determines rent?

209. How does the opportunity for the display of goods affect the rent?

210. Illustrate the effect of demand for commodities upon location. What is the chief principle of ground rents? Give an illustration from a New York suburb of the effect of location upon rent. How have street railways affected ground rents?

211. Are building rents determined on the same principle as ground rents? What are some of the most important factors determining building rents?

212. What is the economic rent of a piece of land? What is meant by "no-rent" land?

CHAPTER VII

213. To what extent does interest figure in the expense accounts of corporations?

214. Why is interest paid?

215. What must the borrower have before he can get control of capital? Define interest. Why is the definition given for interest not correct? What does a bank lend or sell to its depositors? Illustrate.

216. What is the business of banking? What definition of interest covers all excesses? Illustrate.

217. What hold does the creditor have upon the debtor? What are security contracts? What part does the endorser play in a security contract?

218. What is a mortgage? Illustrate the nature of a mortgage grant. What is its advantage to the creditor?

219. What is collateral security? How is the business of giving collateral or mortgage security transacted?

220. How is the discount on the sale of promises to pay expressed? What are the two general classes of loans? Why is interest low on call loans?

221. What are short time commercial loans? By whom are most of these short time and commercial loans offered? In what two forms are these loans made? Compare the English system of loans with the American.

222. What are the three classes of long time loans? What is the purpose of loans on real estate security? What are bonds? How is the interest on bonds paid? What is the expectation of the corporation issuing bonds in regard to them? Upon what does the term of a bond depend?

223. What are public bonds? Why are they issued? What is their security? What happens in case of default?

224. Who purchases long-term obligations? What is the object of the investor? Who are the large investors in the United States?

225. How do rates of interest vary? Upon what does the rate of interest paid by a corporation depend? Illustrate.

226. What are the causes determining the rate of interest? Illustrate. How are these graded as to the preference shown them by investors? How does demand affect interest? Why has the interest rate on United States Government bonds been decreasing?

227. What are the causes which explain the difference in the desirability in the various classes of loans? Why is double-name paper better than single-name paper? When and why were the bonds of the Pennsylvania Railroad Company more secure than the bonds of the United States Government? What is the standing of bonds of mining companies?

228. When is interest low? Illustrate. What is the result of a rise in prices upon interest?

229. What effect do the limitations to the expansions of bank credit have upon rates of interest? What is the effect upon prices? What is the relation of rates of interest to prices?

CHAPTER VIII

230. By what formula may the profits of any business be calculated? Why are profits smaller than is commonly supposed?

231. What does the farmer consider to be his profits? Is he right? What is true of profits in agriculture?

232. Are manufacturing and railroad profits large or small? Why is this so?

233. In estimating the profits of a business what fact is ignored? What is the influence of competition upon profits?

234. Illustrate the effect of growing competition on prices. What does the average producer consider to be his running expenses? Why is he unwilling to close down his plant?

235. What testifies to the fact that large profits may be and are being made in the United States? What are the five sources of profits?

236. How have most great American fortunes been made?

237. What is the primary reason for large and small profits? Show the place of brains in business. How did the Carnegie Steel Company realize large profits?

238. What are the advantages of the Carnegie Steel Company? Why did the concentration of their mills give the Carnegie Steel Company an advantage?

239. What was the policy of the Carnegie Steel Company as to equipment? Upon what did the efficiency of the Carnegie Steel Company depend? How did the Carnegie Steel Company get control of the market and its prices? What is the real factor in business success?

240. What effect has extraordinary demand on profits? Illustrate. How can the producer take advantage of the fact that costs of production do not change as rapidly as prices?

241. What is meant by speculation? How is it carried on? What is true of the losses in comparison with the gains through speculation?

242. What is the surest and safest way to earn large profits? What is monopoly of ability?

243. Illustrate the monopoly of large industries. What are the advantages of a large producer? How do monopoly prices differ from competitive prices?

244. What is a franchise? Illustrate. What is a patent?

245. How is a monopoly of quality obtained? What part does advertising play in building up a monopoly? Why is this form of monopoly most desirable?

CHAPTER IX

246. How can it be said that every man, woman and child in the United States pays taxes? What are the twofold functions of government? Give examples of the inactive functions of government. What are the two classes of service included under the functions of government? Give examples of each.

247. What is a tax? What is the most important significant feature of a tax?

248. What is the basis of taxation?

249. What are the maxims of taxation?

250. What is the general division of taxes? How is each division levied?

251. What are the advantages of direct taxation? What are the disadvantages of direct taxation?

252. What are the advantages of indirect taxation? What are the disadvantages of indirect taxation?

253. What is the basis of the general property tax? How is it collected? What are the objections to the general property tax? What is the only argument which can be advanced in support of the general property tax? How may it be somewhat remedied?

254. What is the basis of the income tax? What are its advantages? What are the objections to the income tax? What has been the history of the income tax in the United States?

255. Who has been the most permanent advocate of the single tax? Upon what does he base his theory?

256. What does the single taxer propose? How do they expect to accomplish this purpose? What is to become of the other fixed taxes?

257. What are the fiscal objections to the single tax? Why could it not be collected?

258. What are the economic objections to the single tax? Why would it be a socialistic measure?

259. Define inheritance tax? What are the justifications for an inheritance tax? Upon what principle are inheritance taxes levied in various countries? Why has this form of taxation been generally employed in the United States?

260. What are the two general classes of indirect taxes? What are the three methods employed in excise taxation? Explain the workings of each? Upon what articles should excise duties be levied?

261. What are customs? What is the purpose of customs duties? Upon what principle should they be levied? Distinguish between specific duty and an ad valorem duty?

262. What would be the ideal system of taxation?

PART IV

CHAPTER I

263. What is the importance of transportation?

264. What forms of transportation have given rise to problems in their growth? What was the first railroad? When did the process of "linear consolidation" take place? What was the period of expansion of railway mileage? What evils resulted from railroad competition? What has characterized the period up to the present time?

265. What two points must be borne in mind in order to understand the real nature of the railroad problem? What is gained by the diminishing expense of the railroad?

266. Why does selling transportation differ from selling ordinary commodities? How has the government made possible the present American transportation system? Why should railroads be under public regulation? What two regulations does the state place on railroads?

267. Why is the problem of discrimination difficult to settle? What are the three kinds of discrimination? Who is the man usually discriminated against? Why are the effects of discrimination between places more far-reaching than discriminations between persons? Illustrate. What effect does discrimination on commodities have upon industry? As a rule how does the traffic manager arrange rates?

268. What were the first steps in railroad legislation? Why were they ineffective? What lesson had to be learned?

269. What was the first act of Congress in reference to railroads? What five points did it cover? How were the provisions of the law to be enforced?

270. What was the chief effect of the Elkins Law?

271. What has been the result of the Hepburn Act? What problem has been settled? What new problem remains?

272. What may be said for government ownership of railroads? What are the important arguments in favor of private ownership?

CHAPTER II

273. What is the permanent basis of international trade? Illustrate. What economic variations cause a difference in the output? What is the point at issue between the protectionists and the free trader?

274. What are the two types of tariff? What are the objections to each type?

275. How does a protective tariff operate? Under a prohibitive tariff who in practice pays the tax?

276. What do protectionists attack as to the burden of the tax? How can we justify the attitude of the country that taxes itself at an early date? Why is there a law sustained at first?

277. What is meant by dumping? How does it come about? Is it permanent? Give an illustration? Is dumping a dead isue?

278. Compare the steel prices in England and in America? What would very probably have happened had the United States not had a protective tariff? Why is price-cutting essential to dumping?

279. How can the producer afford the expense of dumping? Illustrate.

280. What is the significant figure in the expenditures of a steel mill?

281. What effect does the dumping of the United States Steel Corporation have upon English producers? How does it furnish the English protectionist its sanest argument?

282. What prevents dumping? What would happen if the tariff law were removed on British and German steel? What circumstances would hamper foreign producers?

283. How would free iron and steel prove an undisguised blessing to the American producer? What solution to the tariff problem has been suggested? Is it to be expected that the United States will abandon a protective system? What is the open question in the tariff agitation?

284. What affect have the high tariffs passed at the time of the Civil War had upon our industries? Why does the American producer at present feel the need for reciprocity?

285 What are the three chief types of tariff systems? In what respects is the German system a satisfactory one? Why could it not be readily introduced into the American system of government? What system seems best suited to American conditions? Why cannot the tariff problem be definitely settled for all time?

CHAPTER III

286. How did the trust movement begin? What followed the organization of the Sugar Trust? Up until 1893 what were the principal combinations listed on the New York Exchange?

287. From what year does the real trust movement

date? What has been the growth of the trusts in the field of consumption goods? What is the probable origin of the trust movement? What were the financial and industrial conditions after the panic of 1893?

288. What effect did the return of prosperity have upon the trusts? Illustrate the rise in stocks. Did the demand for stocks rise?

289. What is the function of the promoter? Why were the railroad stocks in 1898 no longer available? What was the result? What was the new outlet for investment? During the times of depression what has competition meant to the producer?

290. What attempts had been made before 1898 to lessen the recognized evils of competition? How does the pool hope to secure profitable prices? What is the relation of different managements to the pool?

291. What is the essential weakness of the pool? Why is the successful management of a pool difficult during a period of business depression? Give an example.

292. In a trust how is agreement among managers secured? To what was the holder of trust certificates entitled? How was permanence of control secured? How did the trust furnish a more satisfactory restriction of competition?

293. Why could not the details of trust organizations be concealed? What legal basis was there for the tax on the trusts? What was the first suit brought against the trust? What did the results of this first lawsuit show? How did the power of the state to revoke corporation charters affect the trust?

294. Before 1889 what was the general rule as to the purpose of organized corporations? Upon what change in this purpose did the future of this trust depend?

What changes need be made in the organization? What would be the result? Under what conditions could the holding company dissolve corporations?

295. Did the holding company differ in principle from the legal trust? What legal difficulty confronted the trust? How was it overcome?

296. What are the provisions of the Corporation Law of New Jersey? What were the consequences of this statute?

297. How was the legal position of the holding company finally established? What was the decision of the court as to the Sherman Act? What was proved to be the solution of the trust problem? How was it legally protected?

298. How did the advantages of combination come to be generally recognized? What was the result of this favorable attitude toward the trust? What is the kernel of the so-called trust problem?

299. What are the unfair advantages of the trust? What has been one of the biggest factors in the past in hastening centralization in industry? What examples are there?

300. What evidence has been given as to discrimination in prices? What information did the industrial commission secure as to discrimination in local markets? What are the probable causes of these variations in price?

301. How do the trusts pocket the products of other producers? Give example.

302. What is the basis of popular antagonism toward trusts? What does Professor Jenks conclude as to trust prices? What effect have the trusts had upon the passage of tariff bills? What has public opinion forced the trusts to do in order to prevent the corrup-

tion of public officials? What influence have the railroads in politics?

303. What effect has stock manipulation on public welfare? Why cannot the investing public gain adequate knowledge as to what will be a safe investment? How do stock manipulations affect the small investor? How is a fictitious value given to stock?

304. What were the first anti-trust laws? What was the decision of the United States Supreme Court as to these laws? How did the state fare?

305. What does the Sherman Antitrust Act declare?

306. To what cases has this law been mainly applied? Why has it failed? What is interstate commerce as interpreted by the United States Supreme Court? How does the trust escape both state and federal jurisdiction? Why are the state governments powerless in controlling the trusts? How can any state action be rendered useless?

307. What is the aim of corporation control at present? How is this to be brought about? Who is at the head of the Bureau of Corporations at present? What are his powers?

308. In what three ways may the trust problem be solved?

CHAPTER IV

309. Is the problem of monopoly identical with that of the trust? Which is the broader terms? How is monopoly represented in the popular mind? What is the view of certain economists as to monopoly?

310. What is the opposing view as to monopoly? Illustrate.

311. Show how progress results in monopoly? How should the social surplus be divided? How does the present social surplus afford a monopoly fund? Illustrate the fact that a monopoly is never destroyed. What conclusion can be drawn as to the extent of monopoly power?

312. What is the real nature of the monopoly problem? Illustrate. How does monopoly take advantage of the variation in social income?

313. How would you apportion the social surplus? How do they propose to pay wages?

314. What are the objections to government regulation of prices? What are the four classes of property that can claim a large share of the social surplus? What should be the aim of those who wish to reform monopoly power?

315. What are the limitations of monopoly power? Why should the trust movement of recent years be considered a social gain? What effect has the growth of industrial combination had upon monopoly power?

316. What safeguard has the consumer against the power of monopoly? Illustrate. How may the trust movement be considered socialistic? In what way may the consumers be compensated for the loss of their free income?

317. What is the solution of the monopoly problem? Illustrate its working out.

318. What is meant by the power of substitution? Explain the sympathetic movement of prices. What effect does this movement have upon monopoly power. Illustrate.

319. Why cannot the Standard Oil Company exercise its monopoly power to the fullest extent? In what

way did the power of substitution affect the Beef Trust?

CHAPTER V

320. How may social welfare compel government regulation of prices?

321. Upon what does the existence of social unrest depend? What social problems has this nation to face? What is the strength of the socialist party in this country?

322. What five objections does the socialist make to the present order of things? What does the socialist mean by exploitation? What is its cause? How does socialism deal with monopoly power?

323. What criticism does the socialist make upon the present nature of society?

324. In what way is the wastefulness of modern society displayed?

325. What evils spring from competition?

326. What is the socialistic problem? What results would it bring about? What would be the benefits to the individual? What would be the relation of the individual to the government? To what extent does socialism attack the institution of private property?

327. What is the relation of socialism and the single tax? Upon what does the socialist base his belief in the single tax?

328. What would the institution of socialistic government require? What does H. G. Wells consider the necessary antecedent to the adoption of socialism? What course is open to socialists at present?

329. What is the tendency in modern opposing schools of thought? What has caused the change in the

socialist attitude? What features in modern industrial life show the progress from the old laissez faire theory of government? What will very probably be the next step toward the realization of a socialistic program?

330. Has socialism abandoned some of its old traditions? Illustrate.

331. Does the modern socialist believe in a democracy? What is the future of the whole socialist movement? What is the weakness of socialism as an immediate and practical line of action?

CHAPTER VI

332. What two conflicting points of view constitute the labor problem?

333. What fact about the union must be realized before taking up a discussion of the labor movement? What are the aims of the union? When wages are reduced to the mere cost of production, what fact is ignored? What has the union to combat? What would be the result of a free competitive system in the labor market? Illustrate.

334. What kind of a bargainer is the single-handed wage earner? Why?

335. What two secret rights clash in carrying out the closed shop policy?

336. What is the boycott? What forms may the boycott take? What may be considered reliable forms of the boycott? How has objection to the boycott shown itself?

337. What justification is there for objection to the introduction of new machinery?

338. What efforts have been made to restrict trade

unions? What is an injunction? Why is it effective? What limits the punishment for offenses against injunctions? Upon what does the power of the union rest? How has the injunction curtailed this power? How have employers curbed the power of the union? Give an example.

339. What are the objections to strikes and lockouts? What four schemes for settling industrial disputes have been proposed? Why is the collective bargain method ideal? Why is the "arbitration board" method less satisfactory? What is the justification for compulsory arbitration? Upon what does the proper solution of the labor problem depend?

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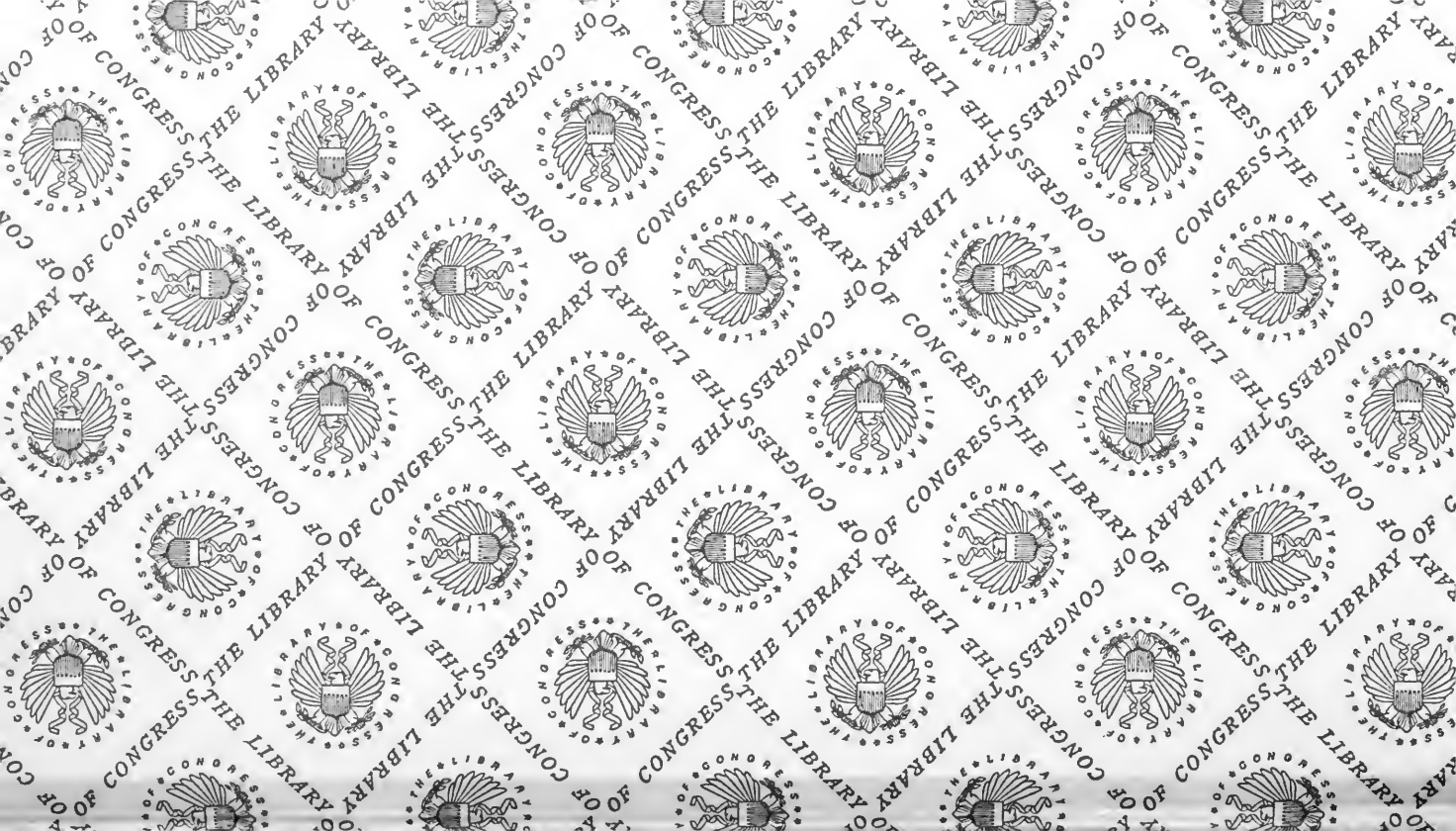
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